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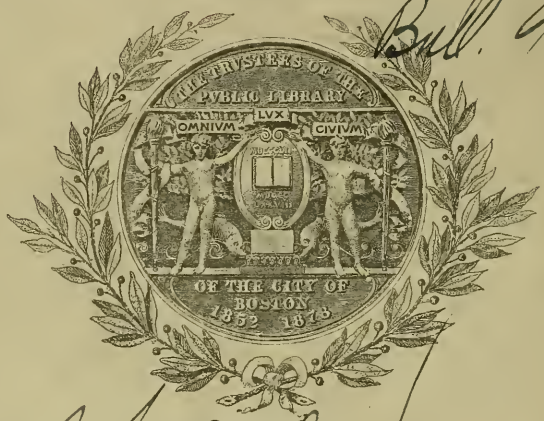

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SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
Bulletin 98

THE BIRDS OF THE ANAMBA ISLANDS

BY

HARRY C. OBERHOLSER
Of the Biological Survey, United States Department of Agriculture

WASHINGTON
GOVERNMENT PRINTING OFFICE
1917

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The scientific publications of the United States National Museum consist of two series, the *Proceedings* and the *Bulletins*.

The *Proceedings*, the first volume of which was issued in 1878, are intended primarily as a medium for the publication of original, and usually brief, papers based on the collections of the National Museum, presenting newly acquired facts in zoology, geology, and anthropology, including descriptions of new forms of animals, and revisions of limited groups. One or two volumes are issued annually and distributed to libraries and scientific organizations. A limited number of copies of each paper, in pamphlet form, is distributed to specialists and others interested in the different subjects as soon as printed. The date of publication is printed on each paper, and these dates are also recorded in the tables of contents of the volumes.

The *Bulletins*, the first of which was issued in 1875, consist of a series of separate publications comprising chiefly monographs of large zoological groups and other general systematic treatises (occasionally in several volumes), faunal works, reports of expeditions, and catalogues of type-specimens, special collections, etc. The majority of the volumes are octavos, but a quarto size has been adopted in a few instances in which large plates were regarded as indispensable.

Since 1902 a series of octavo volumes containing papers relating to the botanical collections of the Museum, and known as the *Contributions from the National Herbarium*, has been published as bulletins.

The present work forms No. 98 of the *Bulletin* series.

RICHARD RATHBUN,
Assistant Secretary, Smithsonian Institution,
In charge of the United States National Museum.

WASHINGTON, D. C., June 12, 1917.

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THE BIRDS OF THE ANAMBA ISLANDS.

By Harry C. Oberholser,
Of the Biological Survey, United States Department of Agriculture.

INTRODUCTION.

Dr. W. L. Abbott was the first ornithological collector to visit the Anamba Islands of the South China Sea. Accompanying him was Mr. C. Boden Kloss, who later published an account of the cruise with a nominal list of the birds of these islands.[1] This trip was made in the summer and autumn of 1899. During the summer of the following year Doctor Abbott again visited these islands. As one of the results of these two excursions Doctor Abbott sent back to the United States National Museum a collection of 212 birds, representing 44 species and subspecies, which has proved to be of much interest.

The following report on the avifauna of the Anamba Islands is based entirely on Doctor Abbott's specimens, his manuscript notes, and the data published by Mr. Kloss.[2] Nineteen new subspecies are here described from the Anamba Islands in addition to the two hitherto published.[3] Two others—one from the Seychelles, the other from the Andaman Islands—are also named incidentally in the following pages.[4]

In the preparation of this contribution the writer has enjoyed the facilities of the United States National Museum, and the cordial cooperation and assistance of the assistant curator of the Division of Birds, Dr. Charles W. Richmond. The writer is also personally indebted to Doctor Abbott for geographical and other information concerning the Anamba Islands.

All measurements are in millimeters, and have been taken as explained in the writer's recent paper on *Butorides virescens*.[5] The names of colors employed in the descriptions are based, except where otherwise stated, on Mr. R. Ridgway's recently published Color

[1] Journ. Straits Branch Roy. Asiatic Soc., No. 41, January, 1904, pp. 53–80.

[2] Idem, pp. 68–80.

[3] *Hypothymis azurea opisthocyanea* Oberholser, Proc. U. S. Nat. Mus., vol. 39, Feb. 25, 1911, p. 602; and *Collocalia fuciphaga amechana* Oberholser, Proc. U. S. Nat. Mus., vol. 42, Mar. 6, 1912, p. 13.

[4] See pp. 16 and 24.

[5] Proc. U. S. Nat. Mus., vol. 42, 1912, p. 533.

Standards and Nomenclature.[1] All species not represented in the collection by specimens, but included solely on the authority of Doctor Abbott or Mr. Kloss are prefixed with an asterisk.

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The only published notes on the birds of the Anamba Islands occur in the following papers:

Kloss, C. Boden.—Notes on a Cruise in the Southern China Sea. Journal of the Straits Branch of the Royal Asiatic Society, No. 41, January, 1904, pages 53–80.

Oberholser, Harry C.—A Monograph of the Genus Collocalia. Proceedings of the Academy of Natural Sciences of Philadelphia, April (July 26), 1906, pages 177–212.

Oberholser, Harry C.—A Monograph of the Flycatcher Genera Hypothymis and Cyanonympha. Proceedings of the United States National Museum, vol. 39, February 25, 1911, pages 585–615.

Oberholser, Harry C.—A Revision of the Forms of the Edible Nest Swiftlet, Collocalia fuciphaga (Thunberg). Proceedings of the United States National Museum, vol. 42, March 6, 1912, pages 11–20.

Oberholser, Harry C.—A Synopsis of the Races of the Crested Tern, Thalasseus bergii (Lichtenstein). Proceedings of the United States National Museum, vol. 49, December 23, 1915, pages 515–526, pl. 66.

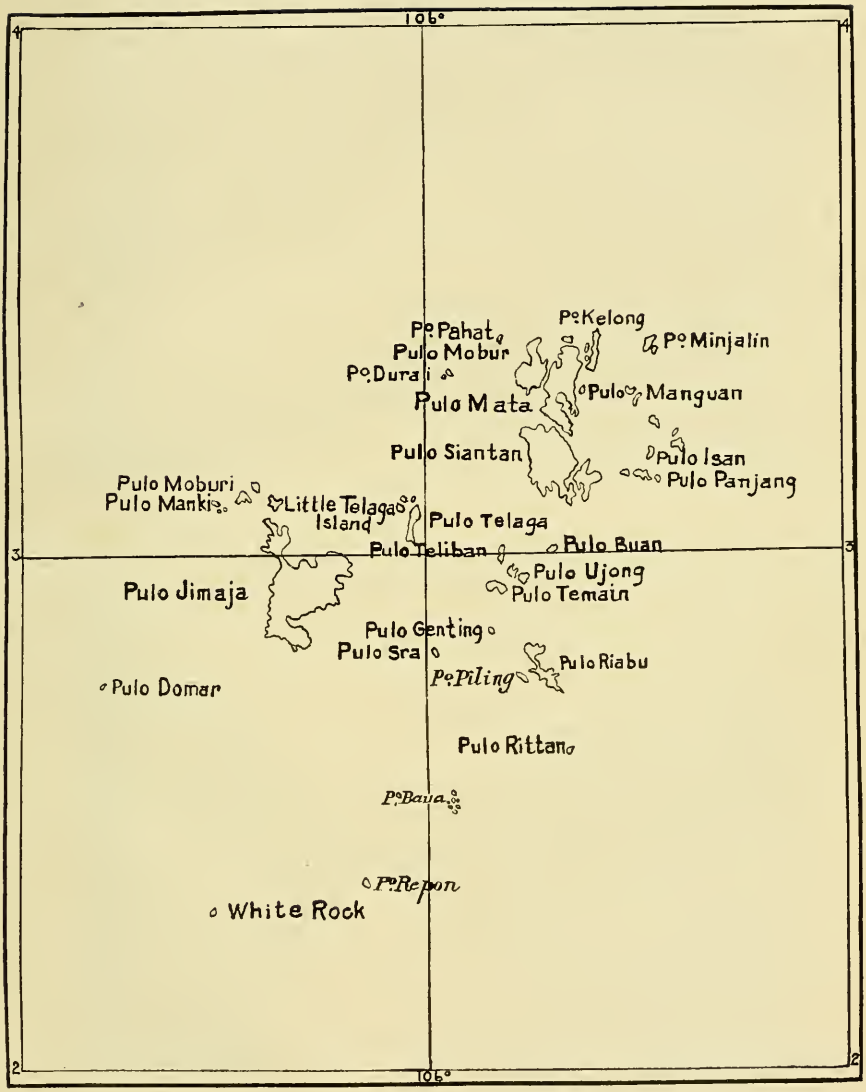
PHYSIOGRAPHY.

The Anamba Islands are situated in the southern portion of the South China Sea, between the Natuna Islands and the Malay Peninsula. The center of the group lies approximately in latitude 3° north and in longitude 106° east; and in an air line is about 140 miles from the nearest point of the Malay Peninsula, 225 miles from Borneo, 240 miles from Sumatra, 610 miles from Java, and 400 miles from the nearest part of the mainland of Cochin China.

There are about 20 principal islands, and possibly 200 more islets and rocks, spread over a geographical area some 55 miles east and west and 65 miles north and south. All fall roughly into three groups: A southern group, which includes Pulo Repon, Baua, Rittan, Riabu, Piling, and White Rock; a northern group, which includes Pulo Siantan, Mata, Mobur, Kelong, Minjalin, Panjang, and Manguan; and a western group, made up of Pulo Jimaja, Telaga, Little Telaga, and Pulo Domar, with, as in the other groups, many islets and rocks.

Nearly all the islands are high and rocky, formed chiefly of hard rocks and laterite, and with a fringe of coral reefs about their bases. There are also many coral reefs between the islands; while the

[1] Ridgway, Color Standards and Color Nomenclature, 1912 (Jan. 16, 1913).



SKETCH MAP OF THE ANAMBA ISLANDS.

UPPER: COASTAL FOREST ON PULO JIMAJA, ANAMBA ISLANDS, THE HOME OF HORIZILLAS MAGNIROSTRIS AND AETHOPYGA SIPÁRAJA OCHROPYRRHA.

LOWER: MANGROVES ALONG THE COAST OF PULO SIANTAN, ANAMBA ISLANDS.

islands of the main, or northern, group—Siantan, Mata, Mobur, etc.—are virtually connected by them. The islands have many coastal indentations, and the numerous resulting bays and channels afford good anchorages. The soil of at least the larger islands is fairly fertile and supports nearly everywhere a good forest growth,[1] except where cleared for cultivation or the planting of coconut trees. These clearings are numerous along the coast of some of the larger islands, while from a few of the smaller islands the forest has entirely disappeared in this way.

Wild mammals are not numerous, and consist chiefly of various species of rats, squirrels, monkeys, tree shrews (*Tupaia*), and bats.

The climate of these islands, owing to frequent heavy rains and fresh breezes, is much cooler than that of Siam.

The population of the Anamba Islands is probably not over 3,000 or 4,000, made up mostly of Malays, with a few Chinese traders. The principal village is Terempa, on a little bay on the northwestern coast of Pulo Siantan. It is inhabited chiefly by Chinese, who have here many shops.

The island of Jimaja, or Pulo [2] Jimaja, the largest of the group, is about 14 miles in length north and south, about 9 miles wide, and has an area of approximately 47 square miles. The surface is uneven, and there are many peaks over 700 feet high, the greatest elevation being 1,530 feet. The coast line is very irregular, and there are consequently numerous bays. In places along the coast there are swampy areas of limited extent grown up to mangroves. There are a number of streams on the island, also a few low waterfalls and pools, the latter merely rocky basins in the stream beds.

Pulo Siantan, in the eastern part of the Anamba Archipelago, is the second largest island, with an area of about 31 square miles. It is rough and hilly, and rises at one point to an altitude of 1,855 feet. There are some small streams on this island, and on the northeastern coast a waterfall about 400 feet high. This island is heavily forested, and has also patches of mangroves in places along its coast.[3]

Pulo Telaga, or Peaked Island, is a conspicuous object in the sea between the northern and western groups, and is surrounded by a number of smaller islands. It is a narrow wooded ridge, about 5 miles long, extending north and south, and has near its northern end a picturesque peak 1,740 feet in height.

Pulo Mata and Pulo Mobur, which lie a short distance north of Pulo Siantan, are among the larger islands, and do not differ in characteristics from those already described.

Pulo Kelong, northeast of Pulo Mata, is a narrow island some 5 miles in length and a mile or less in width east and west, with its ridge rising to a height of 600 or 700 feet.

[1] See pl. 2, upper figure. [2] "Pulo" is the Malay word for island. [3] See pl. 2, lower figure.

ITINERARY.

Doctor Abbott visited the following islands of the Anamba group on the dates given after each:

Pulo Rittan.—May 21, 1900.

Pulo Piling.—August 17, 1899.

Pulo Riabu.—August 18, 1899, and August 22–23, 1900.

Pulo Siantan.—Terempa, August 19–24, 1899; September 7–13, 1899; Telok Ayer Bini, September 5–6, 1899.

Pulo Mobur.—August 24 to September 1, 1899.

Pulo Mata.—August 24 to September 1, 1899.

Pulo Kelong.—September 1, 1899.

Pulo Manguan.—September 1–2, 1899.

Pulo Telaga.—September 14–15, 1899.

Pulo Jimaja.—September 17–28, 1899.

BIRDS OF THE ANAMBA ISLANDS.

The total number of birds, species and subspecies, at present known from the Anamba Islands is 56, of which Doctor Abbott reported 45 and Mr. C. B. Kloss the remaining 11.[1] This is, of course, considering the area involved, not a large number, and doubtless will be greatly increased by future explorations. The Anamba group, however, seems not to be so rich in bird life as are the Natuna Islands, which lie much nearer Borneo. The complexion of its bird fauna may be seen from the subjoined

CHECK-LIST OF THE BIRDS OF THE ANAMBA ISLANDS.

1. *Fregata minor minor* (Gmelin).
2. *Butorides javanicus javanicus* (Horsfield).
3. *Demiegretta sacra sacra* (Gmelin).
4. *Cuncuma leucogastris* (Gmelin).
5. *Arenaria interpres oahuensis* (Bloxham).
6. *Pluvialis dominica fulva* (Gmelin).
7. *Pagoa leschenaultii* (Lesson).
8. *Cirrepidesmus atrifrons* (Wagler).
9. *Totanus totanus eurhinus* Oberholser.
10. *Pisobia ruficollis* (Pallas).
11. *Actitis hypoleuca* (Linnaeus).
12. *Orthorhamphus magnirostris* (Vieillot).
13. *Thalasseus bergii pelecanoides* (King).
14. *Sterna melanauchen melanauchen* Temminck.
15. *Anous stolidus pileatus* (Scopoli).
16. *Caloenas nicobarica* (Linnaeus).
17. *Chalcophaps indica indica* (Linnaeus).
18. *Myristicivora bicolor* (Scopoli).
19. *Muscadivores aeneus polius* Oberholser.[2]
20. *Dendrophassa vernans adina* Oberholser.[2]
21. *Loriculus galgulus* (Linnaeus).

[1] Journ. Straits Branch Roy. Asiatic Soc., No. 41, January, 1904, p. 79.

[2] New subspecies; described beyond.

22. *Conurus longicaudus* (Boddaert).
23. *Urococcyx erythrognathus* (Hartlaub).
24. *Sauropatis chloris cyanescens* Oberholser.
25. *Alcedo ispida bengalensis* Gmelin.
26. *Ceyx rufidorsus rufidorsus* Strickland.
27. *Micropus subfurcatus* (Blyth).
28. *Collocalia lowi* (Sharpe.)
29. *Collocalia vestita amechana* Oberholser.
30. *Hemiprocne longipennis harterti* Stresemann.
31. *Hemiprocne comata comata* (Temminck).
32. *Hirundo rustica gutturalis* Scopoli.
33. *Hypurolepis javanica abbotti* Oberholser.[1]
34. *Lanius cristatus* Linnaeus.
35. *Artamides sumatrensis calopolius* Oberholser.[1]
36. *Cyornis banyumas lampra* Oberholser.[1]
37. *Xanthopygia zanthopygia* (Hay).
38. *Hypothymis azurea opisthocyanea* Oberholser.
39. *Aegithina viridissima thapsina* Oberholser.[1]
40. *Pycnonotus plumosus chiroplethis* Oberholser.[1]
41. *Pycnonotus simplex halizonus* Oberholser.[1]
42. *Pycnonotus brunneus zapolius* Oberholser.[1]
43. *Horizillas magnirostris* (Moore).
44. *Anuropsis malaccensis malaccensis* (Hartlaub).
45. *Mixornis pileata zophera* Oberholser.[1]
46. *Kittacincla malabarica ochroptila* Oberholser.[1]
47. *Kittacincla malabarica heterogyna* Oberholser.[1]
48. *Orthotomus atrogularis* Temminck.
49. *Gracula javana prasiocara* Oberholser.[1]
50. *Lamprocorax panayensis heterochlorus* Oberholser.[1]
51. *Dissemurus paradiseus microlophus* Oberholser.[1]
52. *Motacilla boarula melanope* Pallas.
53. *Anthreptes malacensis anambae* Oberholser.[1]
54. *Cinnyris brasiliana eumecis* Oberholser.[1]
55. *Aethopyga siparaja ochropyrrha* Oberholser.[1]
56. *Dicaeum trigonostigmum hypochloum* Oberholser.[1]

DISTRIBUTION OF BIRDS BY ISLANDS.

So far as known, there is only a single species, *Kittacincla malabarica*, which has more than one subspecies in these islands. In this case *Kittacincla malabarica heterogyna* occurs on the southern Pulo Riabu and Pulo Piling; while *Kittacincla malabarica ochroptila* occupies the more northern islands. The bird of widest distribution in the Anamba Islands appears to be *Cyornis banyumas lampra*, for Doctor Abbott found it on 9 of the 10 islands that he visited. Next to this, *Dissemurus paradiseus microlophus*, *Anthreptes malacensis anambae*, and *Aethopyga siparaja ochropyrrha* were each found on 8 islands; *Muscadivores aeneus polius* on 7; *Dendrophassa vernans adina* on 6; *Hypurolepis javanica abbotti*, *Hypothymis azurea opisthocyanea*, and *Gracula javana prasiocara* on 5 islands; and the following on 4: *Cuncuma leucogastris*, *Myristicivora bicolor*, *Alcedo ispida bengalensis*,

[1] New subspecies; described beyond.

Mixornis pileata zophera, Kittacincla malabarica ochroptila, Orthotomus atrogularis, and *Lamprocorax panayensis heterochlorus.*

Lists of the birds found by Doctor Abbott on the different islands are given below.

PULO RITTAN.

Myristicivora bicolor.
Cyornis banyumas lampra.
Anthreptes malacensis anambae.
Aethopyga siparaja ochropyrrha.

PULO PILING.

Myristicivora bicolor.
Cyornis banyumas lampra.
Hypothymis azurea opisthocyanea.
Kittacincla malabarica heterogyna.
Gracula javana prasiocara.
Dissemurus paradiseus microlophus.

PULO RIABU.

Cuncuma leucogastris.
Myristicivora bicolor.
Muscadivores aeneus polius.
Alcedo ispida bengalensis.
Collocalia lowi.
Hypothymis azurea opisthocyanea.
Pycnonotus plumosus chiroplethis.
Mixornis pileata zophera.
Kittacincla malabarica heterogyna.
Gracula javana prasiocara.
Dissemurus paradiseus microlophus.

PULO SIANTAN.

Cuncuma leucogastris.
Actitis hypoleuca.
Muscadivores aeneus polius.
Dendrophassa vernans adina.
Urococcyx erythrognathus.
Sauropatis chloris cyanescens.
Alcedo ispida bengalensis.
Hypurolepis javanica abbotti.
Cyornis banyumas lampra.
Xanthopygia zanthopygia.
Hypothymis azurea opisthocyanea.
Aegithina viridissima thapsina.
Pycnonotus plumosus chiroplethis.
Pycnonotus simplex halizonus.
Pycnonotus brunneus zapolius.

Horizillas magnirostris.
Anuropsis malaccensis malaccensis.
Mixornis pileata zophera.
Kittacincla malabarica ochroptila.
Orthotomus atrogularis.
Gracula javana prasiocara.
Lamprocorax panayensis heterochlorus.
Dissemurus paradiseus microlophus.
Anthreptes malacensis anambae.
Cinnyris brasiliana eumecis.
Aethopyga siparaja ochropyrrha.
Dicaeum trigonostigmum hypochloum.

PULO MOBUR.

Chalcophaps indica indica.
Myristicivora bicolor.
Muscadivores aeneus polius.
Dendrophassa vernans adina.
Sauropatis chloris cyanescens.
Cyornis banyumas lampra.
Pycnonotus plumosus chiroplethis.
Orthotomus atrogularis.
Gracula javana prasiocara.
Lamprocorax panayensis heterochlorus.
Dissemurus paradiseus microlophus.
Anthreptes malacensis anambae.
Aethopyga siparaja ochropyrrha.
Dicaeum trigonostigmum hypochloum.

PULO MATA.

Arenaria interpres oahuensis.
Cirrepidesmus atrifrons.
Pisobia ruficollis.
Thalasseus bergii pelecanoides.
Sterna melanauchen melanauchen.
Muscadivores aeneus polius.
Dendrophassa vernans adina.
Sauropatis chloris cyanescens.
Hypurolepis javanica abbotti.
Artamides sumatrensis calopolius.
Cyornis banyumas lampra.
Horizillas magnirostris.
Orthotomus atrogularis.
Lamprocorax panayensis heterochlorus.
Anthreptes malacensis anambae.
Aethopyga siparaja ochropyrrha.

PULO KELONG.

Pagoa leschenaultii.
Cirrepidesmus atrifrons.
Thalasseus bergii pelecanoides.
Sterna melanauchen melanauchen.
Cyornis banyumas lampra.
Kittacincla malabarica ochroptila.
Dissemurus paradiseus microlophus.
Anthreptes malacensis anambae.
Aethopyga siparaja ochropyrrha.

PULO MANGUAN.

Muscadivores aeneus polius.
Alcedo ispida bengalensis.
Hypurolepis javanica abbotti.
Cyornis banyumas lampra.
Hypothymis azurea opisthocyanea.
Kittacincla malabarica ochroptila.
Gracula javana prasiocara.
Dissemurus paradiseus microlophus.
Motacilla boarula melanope.
Anthreptes malacensis anambae.
Cinnyris brasiliana eumecis.
Aethopyga siparaja ochropyrrha.

PULO TELAGA.

Cuncuma leucogastris.
Actitis hypoleuca.
Muscadivores aeneus polius.
Dendrophassa vernans adina.
Hypurolepis javanica abbotti.
Cyornis banyumas lampra.
Hypothymis azurea opisthocyanea.
Mixornis pileata zophera.
Lamprocorax panayensis heteroehlorus.
Dissemurus paradiseus microlophus.
Anthreptes malacensis anambae.
Aethopyga siparaja ochropyrrha.

PULO JIMAJA.

Cuncuma leucogastris.
Totanus totanus eurhinus.
Muscadivores aeneus polius.
Dendrophassa vernans adina.
Conurus longicaudus.
Alcedo ispida bengalensis.

Ceyx rufidorsus rufidorsus.
Collocalia vestita amechana.
Hemiprocne longipennis harterti.
Hirundo rustica gutturalis.
Hypurolepis javanica abbotti.
Cyornis banyumas lampra.
Hypothymis azurea opisthocyanea.
Pycnonotus simplex halizonus.
Horizillas magnirostris.
Anuropsis malaccensis malaccensis.
Mixornis pileata zophera.
Kittacincla malabarica ochroptila.
Orthotomus atrogularis.
Dissemurus paradiseus microlophus.
Anthreptes malacensis anambae.
Cinnyris brasiliana eumecis.
Aethopyga siparaja ochropyrrha.

FAUNAL RELATIONSHIPS OF THE ANAMBA ISLANDS.

The southern end of the South China Sea is hemmed in on the east by Borneo, and on the west by Sumatra and the Malay Peninsula. To the south are the southeastern end of Sumatra, and, beyond the Java Sea, the island of Java; while to the north the nearest land mass is the mainland of Indo-China. Scattered all through the southern portion of the South China Sea are numerous small islands, the largest of which, Banka and Billiton, mark the transition to the Java Sea.

The avifaunal relationships of the Anamba Islands are, as would be expected, with the small islands of the adjacent waters, and with the five large land areas above mentioned. A brief analysis will aid in determining to which of the latter the Anamba Islands are most closely affined. Of the 56 birds now known from the Anamba group, the following 11 are migrants from the north, do not breed here, and hence are to be disregarded in faunal comparisons:

Arenaria interpres oahuensis.
Pluvialis dominica fulva.
Pagoa leschenaultii.
Cirrepidesmus atrifrons.
Totanus totanus eurhinus.
Pisobia ruficollis.
Actitis hypoleuca.
Hirundo rustica gutturalis.
Lanius cristatus.
Xanthopygia zanthopygia.
Motacilla boarula melanope.

The remaining 45 species and subspecies may properly form the basis of our faunal deductions. There are not yet sufficient data for entirely satisfactory comparison of the birds of the various islands or groups of islands in the Anamba archipelago; but so far as I can see from our present knowledge there is very little difference between the individual islands, or between the islands of the eastern and western or northern and southern parts of the group. My treatment here is, therefore, of the Anamba Islands as a faunal whole.

Fifteen species, or rather their subspecific representatives, are peculiar to the Anamba Islands, as follows:

Muscadivores aeneus polius.
Dendrophassa vernans adina.
Collocalia vestita amechana.
Artamides sumatrensis calopolius.
Cyornis banyumas lampra.
Pycnonotus plumosus chiroplethis.
Pycnonotus simplex halizonus.
Pycnonotus brunneus zapolius.
Mixornis pileata zophera.
Kittacincla malabarica heterogyna.
Gracula javana prasiocara.
Dissemurus paradiseus microlophus.
Anthreptes malacensis anambae.
Cinnyris brasiliana eumecis.
Dicaeum trigonostigmum hypochloum.

Of these, the nearest relatives of 7 are found in the Malay Peninsula; of 4 on Sumatra; of 4 on Borneo; of 2 on Java; and of 1 in Indo-China.[1]

Subspecies of 6 other species are, outside of the Anamba Islands, confined to some of the other small islands of the South China Sea, chiefly the Natuna Islands, the Tambelan Islands, Pulo Tioman, and Karimata Island. These subspecies are:

Hypurolepis javanica abbotti.
Hypothymis azurea opisthocyanea.
Aegithina viridissima thapsina.
Kittacincla malabarica ochroptila.
Lamprocorax panayensis heterochlorus.
Aethopyga siparaja ochropyrrha.

Of these, 6 find their nearest relatives in the Malay Peninsula, 1 on Sumatra, 1 on Borneo, 1 on Java, and none in Indo-China.[1]

The remaining 24 Anamba birds belong to more or less wide ranging Asian, Indo-Malayan, East Indian, Polynesian, Australian, Old World tropical, or tropicopolitan species. Twenty-two of these

[1] In this, as in the following enumeration, it is necessary to explain that the nearest relative of some of the Anamba birds occurs in more than one of the five areas above mentioned.

occur in the Malay Peninsula; 22 on Sumatra; 21 on Borneo, 14 on Java; and 11 in Indo-China.

It will readily be seen by examination of these facts that the Anamba Islands, in so far at least as their avifauna indicates, are most closely related to the Malay Peninsula; less so but about equally to Sumatra and Borneo; still less to Java, and only comparatively slightly to Indo-China.

The data on the faunal relationships of Anamba birds given in the above paragraphs may be more graphically presented in the following table. In this the first column is reserved for endemic forms; in the other columns occurrence of the Anamba birds themselves is indicated by an asterisk (*); and of their nearest relatives by a dagger (†).

Faunal relationships of the resident birds of the Anamba Islands.

Name.	Peculiar to Anamba Islands.	Malay Peninsula.	Borneo.	Java.	Sumatra.	Indo-China.
Fregata minor minor	....	*	*	*	*	....
Butorides javanicus javanicus	....	*	*	*	*	*
Demiegretta sacra sacra	....	*	*	*	*	*
Cuncuma leucogastris	....	*	*	*	*	*
Orthorhamphus magnirostris	....	*	*	*	*	....
Thalasseus bergii pelecanoides	....	*	*	*	*	....
Sterna melanauchen melanauchen	....	*	*	*	*	*
Anous stolidus pileatus	....	*	*	*	*	*
Caloenas nicobarica	....	*	....	*	*	*
Chalcophaps indica indica	....	*	*	*	*	*
Myristicivora bicolor	....	*	*	*	*	*
Muscadivores aeneus polius	*	†	....	....	....	....
Dendrophassa vernans adina	*	†	....	....	....	....
Loriculus galgulus	....	*	*	....	*	....
Conurus longicaudus	....	*	*	....	*	....
Urococcyx erythrognathus	....	*	*	....	*	....
Sauropatis chloris cyanescens	....	....	*	....	*	....
Alcedo ispida bengalensis	....	*	*	*	*	*
Ceyx rufidorsus rufidorsus	....	*	*	....	*	....
Micropus subfurcatus	....	*	*	*	*	*
Collocalia lowi	....	....	*	....	*	....
Collocalia vestita amechana	*	....	....	†	....	....
Hemiprocne longipennis harterti	....	*	*	....	*	....
Hemiprocne comata comata	....	*	*	*	*	....
Hypurolepis javanica abbotti [1]	....	†	....	....	....	....
Artamides sumatrensis calopolius	*	†	....	....	....	....
Cyornis banyumas lampra	*	†	....	....	....	....
Hypothymis azurea opisthocyanea [1]	....	†	†	†	†	....
Aegithina viridissima thapsina [1]	....	†	....	....	....	....
Pycnonotus plumosus chiropethis	*	†	†	....	†	†
Pycnonotus simplex halizonus	*	†	....	....	....	....
Pycnonotus brunneus zapolius	*	†	....	....	....	....
Horizillas magnirostris	....	*	*	....	*	*
Anuropsis malaccensis malaccensis	....	*	....	....	....	....
Mixornis pileata zophera	*	....	....	....	†	....
Kittacincla malabarica ochroptila [1]	....	†	....	....	....	....
Kittacincla malabarica heterogyna	*	....	†	....	....	....
Orthotomus atrogularis	....	*	....	....	....	....
Gracula javana prasiocara	*	....	†	†	†	....
Lamprocorax panayensis heterochlorus [1]	....	†	....	....	....	....
Dissemurus paradiscus microlophus	*	....	....	....	†	....
Anthreptes malacensis anambae	*	....	†	....	....	....
Cinnyris brasiliana eumecis	*	†	....	....	....	....
Aethopyga siparaja ochropyrrha [1]	....	†	....	....	....	....
Dicaeum trigonostigmum hypochloum	*	†	....	....	....	....
Totals (including both Anamba forms and nearest relatives)	15	37	26	17	27	12

[1] Occurs on only the Anamba group and other small islands in the southern part of the South China Sea.

ANNOTATED LIST OF BIRDS.

Family FREGATIDAE.

*** FREGATA MINOR MINOR (Gmelin).**[1]

[*Pelecanus*] *minor* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 572 (no locality: type region designated by Rothschild as eastern half of Indian Ocean).

Observed in the Anamba Islands by C. B. Kloss,[2] but not reported by Doctor Abbott.

Family ARDEIDAE.

*** BUTORIDES JAVANICUS JAVANICUS (Horsfield).**

Ardea Javanica HORSFIELD, Trans. Linn. Soc. Lond., vol. 13, 1821, p. 190 (Java).

Recorded from the Anamba Islands by C. B. Kloss.[2]

*** DEMIEGRETTA SACRA SACRA (Gmelin).**

[*Ardea*] *sacra* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 640 (Tahiti Island, Society Islands).

Recorded from the Anamba Islands by C. B. Kloss.[2]

Family BUTEONIDAE.

*** CUNCUMA LEUCOGASTRIS (Gmelin).**

[*Falco*] *leucogaster* GMELIN, Syst. Nat., vol. 1, pt. 1, 1788, p. 257 (no locality: type-locality given by Mathews as New South Wales, Australia).

No specimens of this species were obtained, but it was observed by Doctor Abbott on Pulo Riabu, August 18, 1899; on Pulo Siantan between August 19 and September 13, 1899; on Pulo Telaga, September 14 to 15, 1899; and on Pulo Jimaja between September 17 and 28, 1899.

Family ARENARIIDAE.

ARENARIA INTERPRES OAHUENSIS (Bloxham).

Tringa oahuensis BLOXHAM, in Byron's Voy. *Blonde*, Sandwich Ids., 1826, p. 251 (Sandwich [i. e. Hawaiian] Islands).

One male, No. 171011, U.S.N.M.; Pulo Mata, August 29, 1899. Length, 235 mm. This specimen is apparently immature; and it is molting some of the wing feathers.

Mr. Mathews is apparently quite right in separating the Pacific turnstone from that of Europe,[3] for it differs from the latter, as he says, in smaller size and deeper shade of the chestnut-colored portions of the upper surface. The earliest available name is that selected by Mr. Mathews and here used. It might be well to mention, however, that if the date of Pallas' "Zoographia Rosso-Asiatica" be 1811, as some contend, the proper subspecific designation of this turnstone would probably be *cinclus*, from *Charadrius cinclus* Pallas.[4]

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[1] Species prefixed with an asterisk are not represented in Doctor Abbott's collection.

[2] Journ. Straits Branch Roy. Asiatic Soc., No. 41, January, 1904, p. 80.

[3] Birds Australia, vol. 3, pt. 1, Apr. 2, 1913, pp. 5–10.

[4] Zoogr. Rosso-Asiat., vol. 2 (1811?), 1826, p. 148 (Siberia).

Family CHARADRIIDAE.

* PLUVIALIS DOMINICA FULVA (Gmelin).

[*Charadrius*] *fulvus* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 687 (Tahiti Island, Society Islands).

Recorded from the Anamba Islands by C. B. Kloss,[1] but not noted by Doctor Abbott.

PAGOA LESCHENAULTII (Lesson).[2]

Charadrius Leschenaultii LESSON, Dict. Sci. Nat., vol. 42, 1826, p. 36 (Pondichery, India).

Ch[*aradrius*]. *Geoffroyi* WAGLER, Syst. Avium, 1827, Charadrius, No. 19, p. 61 (Pondichery, India; and Java).

Three adults in winter plumage, as follows:

Male, No. 171033, U.S.N.M.; Pulo Kelong, August 30, 1899. Length, 209.5 mm. "Bill black; feet slaty."

Male, No. 171032, U.S.N.M.; Pulo Kelong, August 30, 1899. Length, 219 mm. "Iris dark brown; bill black; tarsi slaty; toes blackish."

Female, No. 171031, U.S.N.M.; Pulo Kelong, August 30, 1899. Length 203 mm. "Bill black; legs greenish slaty; toes blackish."

All of these birds are in process of molt.

The present species is undoubtedly not a member of the same genus as is *Charadrius asiaticus* Pallas, the type of *Eupoda.* The use of the name *Pagoa* has already been explained.[3]

CIRREPIDESMUS ATRIFRONS (Wagler).

Ch[*aradrius*]. *atrifrons* WAGLER, Isis, 1829, p. 650 (Bengal, India).

Ch[*aradrius*]. *inconspicuus* WAGLER, Isis, 1829, p. 651 (Bengal, India).

Charadrius pyrrhothorax GOULD, Birds Europe, vol. 4, 1837, pl. 299.

Aegialitis pamirensis RICHMOND, Proc. U. S. Nat. Mus., vol. 18, July 25, 1896, p. 589 (Tagdumbash Pamir, central Asia).

Seven specimens:

Adult female, No. 171015, U.S.N.M.; Pulo Mata, August 29, 1899. Length, 190.5 mm.

Immature male, No. 171034, U.S.N.M.; Pulo Kelong, August 30, 1899. Length, 197 mm. "Feet blackish slaty; bill black."

Immature male, No. 171035, U.S.N.M.; Pulo Kelong, August 30, 1899. "Feet dark slaty; iris dark brown."

Male in juvenal plumage, No. 171018, U.S.N.M.; Pulo Mata, August 29, 1899. Length, 203 mm.

Female in juvenal plumage, No. 171016, U.S.N.M.; Pulo Mata, August 29, 1899. Length, 216 mm.

Female in juvenal plumage, No. 171014, U.S.N.M.; Pulo Mata, August 29, 1899. Length, 190.5 mm.

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[1] Journ. Straits Branch Roy. Asiatic Soc., No. 41, January, 1904, p. 80.

[2] For this change of specific name, see Mathews, Emu, vol. 16, July, 1916, p. 34.

[3] See Mathews, Birds Australia, vol. 3, pt. 1, Apr. 2, 1913, pp. 81–84.

Female in juvenal plumage, No. 171017, U.S.N.M.; Pulo Mata, August 29, 1899. Length, 184.5 mm.

Immature male, No. 171034, U.S.N.M., is practically adult except for the incompleteness of the cinnamon breast-band and collar, and the brown, black, and white mottled condition of the mask. The other immature male (No. 171035, U.S.N.M.), is identical with the adult female except for the presence of many dusky feathers on the white forehead.

The male in juvenal plumage (No. 171018) is apparently just like the three juvenal females, and has buffy-suffused lower parts and buffy-edged upper parts.

The specific name of this species must apparently undergo another change, as already indicated by Mr. G. M. Mathews,[1] and the bird now become *Cirrepidesmus atrifrons* (Wagler); since the *Charadrius inconspicuus* of Wagler,[2] the applicability of which was pointed out by the present writer some time ago [3] is posterior to the *Charadrius atrifrons* of Wagler,[4] based evidently on the same species. The use of the generic term *Cirrepidesmus* Bonaparte for this bird is not an innovation here.[5]

Family SCOLOPACIDAE.

TOTANUS TOTANUS EURHINUS Oberholser.

Totanus totanus eurhinus Oberholser, Proc. U. S. Nat. Mus., vol. 22, 1900, p. 207 (Lake Tsomoriri, Ladak).

One male, No. 171067, U.S.N.M., from Pulo Jimaja, September 24, 1899. Length, 276.5 mm. "Iris dark brown; bill black, pale reddish brown at base; feet orange; claws black." This was obtained in an open place in a mangrove swamp.

PISOBIA RUFICOLLIS (Pallas).

Trynga ruficollis Pallas, Reis. Versch. Prov. Russ. Reichs, vol. 3, 1776, p. 700 (Dauria, Siberia).

Two specimens in autumn plumage:

Male, probably immature, No. 171013, U.S.N.M.; Pulo Mata, August 29, 1899. Length, 162 mm.

Adult male, No. 171012, U.S.N.M.; Pulo Mata, August 29, 1899. Length, 159 mm.

Specimens of this species in autumn plumage are very difficult to distinguish with certainty from examples of *Pisobia minuta* in corresponding state, but they are usually paler above, with upper tail-coverts more blackish, and have the lower surface more purely white, the breast less tinged with ashy.

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[1] Birds Australia, vol. 3, pt. 1, Apr. 2, 1913, p. 81.
[2] Isis, 1829, p. 651.
[3] Proc. U. S. Nat. Mus., vol. 22, 1900, p. 207.
[4] Isis, 1829, p. 650.
[5] See Mathews, Birds Australia, vol. 3, pt. 1, Apr. 2, 1913, pp. 81-84.

Mr. Mathews has recently reduced this species to a subspecies of *Pisobia minuta;*[1] but, as it seems to me, judging from the well-characterized differences between the two in summer plumage, upon quite insufficient grounds.

ACTITIS HYPOLEUCA (Linnaeus).

[*Tringa*] *hypoleucos* LINNAEUS, Syst. Nat., ed. 10, 1758, p. 149 (Sweden).

One adult male, No. 170931, U.S.N.M., from Pulo Siantan, August 24, 1899. Length, 199.5 mm.; "feet pale greenish." Doctor Abbott says that the species was common along the beach. He noted it also on Pulo Telaga, September 14–15, 1899.

A series of some 80 specimens of this species in the United States National Museum, covering all parts of its range, seems to show that there are no recognizable subspecies. Careful comparison of these specimens fails to reveal any difference in either size or color between birds from western Europe and those from eastern Asia, notwithstanding their great geographical separation. Hence, the eastern form, *Actitis hypoleuca aurita* (Latham), recently somewhat hesitatingly recognized by Mr. Mathews,[2] can not be maintained.

Family OEDICNEMIDAE.

* ORTHORHAMPHUS MAGNIROSTRIS (Vieillot).

Oedicnemus magnirostris VIEILLOT, Nouv. Dict. d'Hist. Nat., vol. 23, 1818, p. 231 (Geoffroy MS.) (no locality).

Recorded from the Anamba Islands by C. B. Kloss.[3]

Family LARIDAE.

THALASSEUS BERGII PELECANOIDES (King).

Sterna pelecanoides KING, Surv. Intertropical and West Coasts Aust., vol. 2, 1827, p. 422 (Australia).

Two specimens are in the collection, both nearly adult, but showing still some immaturity in the whitish crown, brown primaries, and a few brownish feathers in the wing-coverts. One of these birds (No. 171029, U.S.N.M.) is molting some of the wing-quills.

Male, No. 171010, U.S.N.M.; Pulo Mata, August 28, 1899. Length 470 mm. "Bill dirty yellow; iris dark brown; feet black."

Male, No. 171029, U.S.N.M.; Pulo Kelong, August 30, 1899. Length 444.5 mm. "Bill greenish yellow; feet black, soles pale fleshy."

Both of these examples belong unquestionably to the race inhabiting the East India Islands. For a discussion of the status of this form, as well as for the use of the generic name *Thalasseus*, consult the writer's recent paper on *Thalasseus bergii.*[4]

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[1] Birds Australia, vol. 3, Aug. 18, 1913, p. 250.

[2] Idem, pp. 216–219.

[3] Journ. Straits Branch Roy. Asiatic Soc., No. 41, January, 1904, p. 80.

[4] Oberholser, Proc. U. S. Nat. Mus., vol. 49, Dec. 23, 1915, pp. 515–526.

STERNA MELANAUCHEN MELANAUCHEN Temminck.

Sterna melanauchen Temminck, Nouv. Rec. Planch. Col. d'Oiseaux, vol. 5, livr. 72, 1827, pl. 427 (coast of Celebes).

One specimen, No. 171030, U.S.N.M., Pulo Kelong, August 30, 1899. A few of the wing-quills are in molt.

This example is identical with others from the Philippine Islands, Amoy (China), and Condore Island, and represents the typical form of the species, which was described from Celebes.[1] Birds collected by Doctor Abbott on the islands off the eastern coast of Africa, however, are easily separable subspecifically, and as they hitherto have escaped being named, all the synonyms of the species having been applied to the typical race, they may be known as

STERNA MELANAUCHEN PROVIDA, new subspecies.

Subspecific characters.—Similar to *Sterna melanauchen melanauchen*, but upper parts lighter, the mantle of a paler gray; bill longer; wing, tail, and tarsus shorter.

Description.—Type, adult male, No. 128756, U.S.N.M.; Providence Bank, 300 miles southwest of the Seychelles, north of Madagascar; August 17, 1892; Dr. W. L. Abbott. Crown, hind neck, upper tail-coverts, tail, sides of head and neck, with entire lower parts, including under side of wings, pure white; a spot on lores, and a broad postocular band, broadening posteriorly and uniting with its fellow across the occiput, black; back, rump, scapulars, and exposed surface of wings, very pale pearl gray, this color showing faintly as a narrow stripe along the shafts on the inner webs of the outer few primaries, increasing on the rest of the wing-quills, which are tipped and margined broadly on inner webs with white; outer web of first (outermost) primary all but tip and extreme base blackish slate; bill and feet black.

All the four specimens available present little individual variation in either color or size, except, as is, for obvious reasons, often the case with terns, in the length of the tail-feathers. There seems to be in this species no size difference of consequence between males and females.

The geographic range of *Sterna melanauchen provida* comprises the islands of Aldabra and Providence, with doubtless the neighboring islands off the east African coast, north at least to the Seychelles. The range of the typical form, *Sterna melanauchen melanauchen*, extends probably from the Andaman Islands and Sumatra to the Liu Kiu Islands, Polynesia, and Australia.

The subjoined measurement tables will serve to show the size differences between the two races here defined.

[1] Temminck, Nouv. Rec. Planch. Col. d'Oiseaux, vol. 5, livr. 72, 1827, pl. 427.

Measurements of specimens of Sterna melanauchen provida.

U.S.N.M.No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Bill from gape.	Tarsus.
					mm.	*mm.*	*mm.*	*mm*	*mm*	*mm.*
128758	Male....	Providence Island, 300 miles southwest of the Seychelles.	Aug. 17, 1892	W. L. Abbott.	330.2	.....	129	38.5	50	16.5
128756	...do....	.....do[2].....	.....do.....	.....do.....	327	214	132	39	50.5	16.5
128757	Female .	.....do.....	.....do.....	.....do.....	223.9	215	126.5	35.5	46.5	17
128759	...do....	Aldabra Island, Indian Ocean.	Nov. 29, 1892	.....do.....	298.5	213	105	36.5	47.5	16.2
	Average of 4 specimens.....				294.9	214	123.1	37.4	48.6	16.6

Measurements of specimens of Sterna melanauchen melanauchen.

200769	Male....	Basilan Straits, Philippine Islands.	Apr. 19, 1906	E. A. Mearns..	.....	216	126.5	36.5	47	18.5
200767	...do.....	.....do.....	.....do.....	.....do.....	.....	227	135	35.5	46.5	18.5
107660	Female .	Condore Island, China Sea.	———,1867	M. Germain...	.....	218	127	33	43	17.5
200763	...do.....	Basilan Straits, Philippine Islands.	Apr. 19, 1906	E. A. Mearns..	.....	220	136	36.5	47.5	19.5
200762	...do.....	.....do.....	.....do.....	.....do.....	.....	224	152	34	45	19
200764	...do.....	.....do.....	.....do.....	.....do.....	.....	215	133	32.5	43.5	18
200766	...do.....	.....do.....	.....do.....	.....do.....	.....	220	136	33	44	18
200768	...do.....	.....do.....	.....do.....	.....do.....	.....	221	141	35	47.5	18.5
171030	.....	Pulo Kelong, Anamba Islands.	Aug. 30, 1899	W. L. Abbott.	311.2	226	.....	32.5	44	19.5
	Average of 9 specimens.....				.....	220.8	135.8	34.3	45.3	18.6

[1] Measured in the flesh by the collector. [2] Type.

*** ANOUS STOLIDUS PILEATUS (Scopoli).**

Sterna pileata Scopoli, Del. Faun. et Flor. Insubr., pt. 2, 1786, p. 92, No. 73 (Philippine Islands).

Recorded from the Anamba Islands by Mr. C. B. Kloss.[3]

Family CLARAVIIDAE.

*** CALOENAS NICOBARICA (Linnaeus).**

[*Columba*] *nicobarica* Linnaeus, Syst. Nat., ed. 10, vol. 1, 1758, p. 164 (Nicobar Islands, Bay of Bengal).

Recorded from the Anamba Islands by C. B. Kloss,[4] but not obtained by Doctor Abbott.

CHALCOPHAPS INDICA INDICA (Linnaeus).

[*Columba*] *indica* Linnaeus, Syst. Nat., ed. 10, vol. 1, 1758, p. 164 (eastern India).

One specimen, No. 170992, U.S.N.M., from Pulo Mobur, August 25, 1899. Length, in flesh, 254 mm. "Feet, dark purple red; bill, coral red; cere, dull purple." This bird is apparently identical in size and color with specimens from the Malay Peninsula.

[3] Journ. Straits Branch Roy. Asiatic Soc., No. 41, January, 1904, p. 80. [4] Idem, p. 79.

Family TRERONIDAE.

MYRISTICIVORA BICOLOR (Scopoli).

Columba bicolor Scopoli, Del. Flor. et Faun. Insubr., pt. 2, 1786, p. 94 (New Guinea).

Five specimens in perfect plumage, although the white areas are more or less soiled:

Adult female, No. 174663, U.S.N.M; Pulo Rittan, May 21, 1900. Length, 400 mm. "Bill blue, black at tip; feet pale blue, claws black."

Adult female, No. 170901, U.S.N.M.; Pulo Piling, August 17, 1899. Length, 394 mm.

Adult male, No. 170902, U.S.N.M.; Pulo Piling, August 17, 1899. Length, 394 mm.

Adult male, No. 170900, U.S.N.M.; Pulo Piling, August 17, 1899. Length, 381 mm.

Adult male, No. 170903, U.S.N.M.; Pulo Piling, August 17, 1899. Length, 407.5 mm. "Iris dark brown; bill pale blue, black at tip; feet light blue, claws black."

These all appear to be identical, both in size and color, with birds from the Philippine Islands, Celebes, and Sumatra. Two of our birds, Nos. 170900 and 170901, have a few spots of blackish on the lower tail-coverts, but the others have this part immaculate. Doctor Abbott says that on Pulo Piling, August 17, 1899, this species was "common, feeding in flocks of 12–15 upon wild fruit trees." On an islet off Pulo Mobur, from August 24 to September 1, 1899, a few individuals came to roost at night. This pigeon was seen also on Pulo Riabu, August 18, 1899.

MUSCADIVORES AENEUS POLIUS, new subspecies.

Subspecific characters.—Similar to *Muscadivores aeneus aeneus*, from Borneo, but averaging somewhat smaller, tail more greenish (i. e., less bluish); pileum and nape paler, more grayish (less vinaceous); and lower parts slightly paler.

Description.—Type, adult male, No. 170923, U.S.N.M.; Pulo Siantan, Anamba Islands, August 20, 1899; Dr. W. L. Abbott. Head, throat, and cervix, vinaceous gray, the lower part of the cervix nearly pure gray; chin, extreme anterior part of forehead, and orbital ring, cream white; remaining upper parts metallic bluish green, with a strong bronzy sheen; tail bluish green, with a slight metallic sheen, the middle pair of rectrices most decidedly blue; tertials metallic green like the back; primaries and secondaries dull brown on basal two-thirds of inner half of inner webs, glaucous greenish slate color on remaining portions, the outer vanes of secondaries

with more or less metallic green gloss; primary coverts and exterior greater coverts greenish slate with some metallic green on outer webs; rest of wing-coverts metallic green like the back; crissum deep maroon-chestnut; remainder of inferior parts cinereous with a slight vinaceous tinge, particularly on lower breast and abdomen; under surface of wing-quills fuscous; lining of wing plumbeous; "iris dark red; eyelids deep red; bill leaden; cere purplish red; feet purplish; claws leaden."

This new subspecies is similar to *Muscadivores aeneus chalyburus*, from the Philippine Islands, but differs in having the gray of the head less sharply defined from the metallic green of the back; the posterior lower parts less vinaceous (more clearly grayish); the upper surface of the tail nearly always brighter, less glaucous, more bluish green. All the Anamba Islands specimens are fairly uniform in characters, though two of them, No. 170925, U.S.N.M. and No. 174669, U.S.N.M., have the tail above less bluish than the others, thus approaching *Muscadivores aeneus chalyburus*. Males and females are identical in color. The colors of the soft parts in a male from Pulo Mata (No. 171019, U.S.N.M.) are given as follows: "Bill leaden, pale at tip, dark at base; cere dull purple; feet purple." The same in a female from Pulo Siantan (No. 170924, U.S.N.M.) are: "Iris dark red; eyelids red; feet purple, soles pale brownish; bill leaden; cere reddish." The weight in flesh of each of two males (No. 170925, and No. 170993, U.S.N.M.) is given as 1¼ pounds. Doctor Abbott mentions that he found the species common in the forest on Pulo Siantan, August 19 to September 13, 1899, and on Pulo Telaga, September 14–15, 1899. He observed it also on Pulo Manguan, September 1–2, 1899, and on Pulo Jimaja, September 17–28, 1899.

Measurements of all the specimens obtained are subjoined.

Measurements of specimens of Muscadivores aeneus polius.

U. S. N. M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*
171057	Male....	Pulo Telaga, Anamba Islands.	Sept. 14, 1899	Dr. W. L. Abbott.	412.8	240	142	26	32
171019	Male....	Pulo Mata, Anamba Islands.	Aug. 29, 1899	.....do.....	419.1	226	134	26	29
170993	Male....	Pulo Mobur, Anamba Islands.	Aug. 27, 1899	.....do.....	431.8	235	149	22	32
170923	Male....	Pulo Siantan, Anamba Islands.[2]	Aug. 29, 1899	.....do.....	431.8	226	141	25	30
170926	Male....	.....do.....	Sept. 11, 1899	.....do.....	409.7	222	137	22	32.5
170925	Male....	.....do.....	Sept. 12, 1899	.....do.....	425.5	228	136.5	23	31.5
170924	Male....	.....do.....	Aug. 21, 1899	.....do.....	406.4	221	140	21	29.5
	Average of 7 males.....				419.6	228.3	139.9	23.6	30.9
174669	Female.	Pulo Riabu, Anamba Islands.	Aug. 23, 1900	.....do.....	444.5	239	152	23.5	31

[1] Measured in the flesh by the collector. [2] Type.

DENDROPHASSA VERNANS ADINA, new subspecies.

Subspecific characters.—Similar to *Dendrophassa*[1] *vernans vernans*, from the Philippine Islands, but much larger; male duller, averaging less greenish above, and of a decidedly paler yellow on abdomen; female averaging duller, much less greenish (more plumbeous) above, and much paler, duller, less greenish and yellowish below, the center of abdomen generally whitish.

Description.—Type, adult male, No. 171020, U.S.N.M.; Pulo Mata, Anamba Islands, August 29, 1899; Doctor W. L. Abbott. Pileum, sides of head, chin, and throat, plumbeous, rather darker on occiput, the post-ocular region washed with vinaceous; a collar around hind neck and jugulum, broadening on the sides of the throat and neck, vinaceous heliotrope; interscapulum, back, scapulars, and rump, dull olive green, with a plumbeous wash, and rather brighter posteriorly; upper tail-coverts isabella color, gradually merging into the olive green of rump; tail slate gray, with a broad subterminal band of black, and tipped narrowly with slate color; wing-quills, except tertials, slate black, the outer primaries brownish black distally, all the quills shading inwardly into slate gray basally; tertials and wing-coverts grayish olive green, like the back, the bend of wing washed with plumbeous, the greater coverts and tertials conspicuously margined distally on outer webs with pale yellow; chest tawny ochraceous; lower breast and upper abdomen light yellowish apple green; sides deep plumbeous washed with greenish; lower abdomen and flanks sulphur yellow, the latter broadly streaked with greenish slate color; lower tail-coverts light reddish chestnut; under surface of wing, including wing-coverts and axillars, slate gray.

Doctor Abbott obtained six males and five females from the islands of Siantan, Mata, Mobur, and a small islet near Pulo Mobur. The males show no differences in color between specimens from the different islands, although there is some individual variation in the depth of shades both above and below. The same is true of the females, but the individual variation in them is more marked. One female, No. 170928, U.S.N.M., from Pulo Siantan, is much more greenish above than any of the others, as well as darker below and washed with brownish across the breast; and it is evidently immature, as the tawny-tipped feathers on the sides of the neck indicate. According to data on the labels of the males, the iris is sometimes red, sometimes in two rings, the inner blue, the outer pink; the feet "red" or "dark red;" "bill leaden; cere yellow." Females have the iris yellow, the feet red. On the islet off the coast of Pulo Mobur, where Doctor Abbott took some of these birds, hundreds of them roosted regularly.

[1] For the change of the generic name *Osmotreron* Bonaparte to *Dendrophassa* Gloger, see Oberholser, Smiths. Misc. Coll., vol. 60, No. 7, October 26, 1912, p. 2.

The species was common on Pulo Siantan, August 19 to September 13, 1899; abundant on Pulo Mobur, August 24 to September 1, 1899; observed on Pulo Telaga, September 14–15, 1899; and on Pulo Jimaja, September 17–28, 1899.

Following are measurements of all the specimens taken:

Measurements of specimens of Dendrophassa vernans adina.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*
170990	Male	Islet near Pulo Mobur, Anamba Islands.	Aug. 26, 1899	Dr. W. L. Abbott.	279.4	153.5	92	19	23
170989	do	do	do	do	285.8	149	87	19	24
170987	do	do	do	do	273	153	80.5	18	23.5
170930	do	Pulo Siantan, Anamba Islands.	Sept. 12, 1899	do	304.8	155	94	18.5	24.5
171020[2]	do	Pulo Mata, Anamba Islands.	Aug. 29, 1899	do		161	100	17.5	24
171021	do	do	do	do	292	151.5	91.5	18.5	23
Average of 6 males					287.0	153.8	91.8	18.4	23.7
170991	Female	Pulo Mobur, Anamba Islands.	Aug. 26, 1899	Dr. W. L. Abbott.	279.4	151	84	18	25
170988	do	Islet near Pulo Mobur, Anamba Islands.	do	do		153.5	96	16.5	23.5
170927	do	Pulo Siantan, Anamba Islands.	Sept. 10, 1899	do	266.7	147.5	80	17	22.5
170928	do	do	Sept. 11, 1899	do	273	144.5	85	17	24
170929	do	do	Sept. 12, 1899	do	273	158	79	17	23.5
Average of 5 females					273.0	150.9	84.8	17.1	23.3

[1] Measured in the flesh by the collector. [2] Type.

Family PSITTACIDAE.

*LORICULUS GALGULUS (Linnaeus).

[*Psittacus*] *Galgulus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 103 (India).

Reported from the Anamba Islands by C. B. Kloss.[3]

CONURUS LONGICAUDUS (Boddaert).[4]

Psittacus longicauda BODDAERT, Tabl. Planch. Enlum. d'Hist. Nat., 1783, p. 53 (Malacca, Malay Peninsula).

A single adult, No. 171068, U.S.N.M., from Pulo Jimaja, September 27, 1899. Length, 432 mm. "Iris in two rings—the inner green, the outer yellowish white; feet green; upper mandible red, horn brown at tip; lower mandible horny brown." This specimen is rather more bluish above than birds from the Malay Peninsula and Sumatra, but such is probably only individual variation. Doctor Abbott states that the species was common on Pulo Jimaja.

[3] Journ. Straits Branch Roy. Asiatic Soc., No. 41, January, 1904, p. 79.

[4] For the change of generic name from *Palaeornis* to *Conurus*, see Mathews, Novit. Zool., vol. 18, 1911 p. 11.

Family CUCULIDAE.

UROCOCCYX ERYTHROGNATHUS (Hartlaub).

Phoenicophaeus erythrognathus HARTLAUB, Syst. Verz. Naturhist. Samml. Gesellschaft Mus. [Bremen], pt. 1, 1844, p. 95 (Sumatra).

One adult male, No. 170932, U.S.N.M., from Pulo Siantan, taken in heavy forest, September 11, 1899. Length 477 mm.; "iris blue; naked orbital skin red; bill green, base dull red; feet dark leaden." In both size and color it is identical with birds from the Malay Peninsula.

Dr. C. Parrot's recent reference of this species to the genus *Rhamphococcyx* [1] is not valid, since *Urococcyx* is generically distinct, as the structure of the nostrils well shows.

Family ALCEDINIDAE.

SAUROPATIS CHLORIS CYANESCENS Oberholser.

Sauropatis chloris cyanescens OBERHOLSER, Proc. U. S. Nat. Mus., vol. 52, February 8, 1917, p. 189 (Pulo Taya, eastern Sumatra).

Two specimens of this recently described race are in the collection—an adult male from Pulo Mobur, August 26, 1899; and an immature male from Pulo Mata, August 28, 1899. The latter is rather more greenish on the upper parts than the adult, has the crown somewhat more brownish, the forehead with whitish edgings, the white feathers of the breast tipped with dusky; and it is also somewhat smaller. Both examples are indistinguishable from Bornean specimens. Doctor Abbott saw this kingfisher also on Pulo Siantan, August 19 to September 13, 1899.

The generic name *Sauropatis* Cabanis and Heine is, as already shown,[2] the proper one for the present species. Of the generic distinctness of this group from *Halcyon* and *Entomothera* [3] there can be little doubt.

Measurements of specimens of Sauropatis chloris cyanescens.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[4]	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*
170994....	Male..	Pulo Mobur, Anamba Islands.	Aug. 26, 1899	Dr. W. L. Abbott.	247.6	111.5	68	47	15.5
171022....	Male, im.	Pulo Mata, Anamba Islands.	Aug. 28, 1899	.....do.....	254	108.5	66	41.5	17

[1] Abhandl. k. Bayer. Akad. Wiss., II Kl., vol. 24, 1 Abth., 1907, p. 185.

[2] Mathews, Austral Avian Record, vol. 1, No. 5, Dec. 24, 1912, pp. 108–109; Oberholser, Proc. U. S. Nat. Mus., vol. 52, February 8, 1917, p. 189.

[3] See Oberholser, Proc. U. S. Nat. Mus., vol. 48, May 18, 1915, p. 642.

[4] Measured in the flesh by the collector.

ALCEDO ISPIDA BENGALENSIS Gmelin.

[*Alcedo*] *bengalensis* GMELIN, Syst. Nat., vol. 1, pt. 1, 1788, p. 450 (Bengal, India).

One immature male, No. 174699, U.S.N.M., from Pulo Riabu, August 22, 1900; length in flesh, 172 mm. Doctor Abbott reported this species tolerably common on Pulo Jimaja, September 17–28, 1899; noted it on Pulo Siantan, August 19 to September 13, 1899; and on Pulo Manguan, September 1–2, 1899.

Although difference in size appears to be the only distinction between *Alcedo ispida ispida* and *Alcedo ispida bengalensis*, the latter is quite enough smaller to warrant its recognition.

CEYX RUFIDORSUS RUFIDORSUS (Strickland).[1]

Ceyx rufidorsa STRICKLAND, Proc. Zool. Soc. Lond., 1846, p. 99 (Malacca).

One adult male, No. 171073, U.S.N.M., from Pulo Jimaja, September 25, 1899. Length, 149 mm. "Iris dark brown; bill and feet coral red. The only one seen; shot on a small creek in jungle; stomach contained insects."

According to the geographical lines that Doctor Hartert has drawn,[2] this bird should be true *Ceyx rufidorsus rufidorsus*, but it is very small for that form, as the wing measures only 57 mm., and the exposed culmen 33.5 mm. It is also paler below than specimens from other localities usually are. Possibly further examples from the Anamba Islands would show these differences to be subspecific.

The Indo-Malayan region from Java and Borneo westward, exclusive of most of the Philippine Islands, possesses the following six forms of this beautiful genus:

1. *Ceyx rufidorsus rufidorsus* Strickland (= *Ceyx euerythra* Sharpe; = *Ceyx rufidorsa robusta* Parrot, Abhandl. k. Bayer. Akad. Wiss., II Kl., vol. 24, 1 Abth., 1907, p. 208). Southern Malay Peninsula, Sumatra, Batu Islands, Linga Islands, Borneo, Labuan Island, Natuna Islands, Anamba Islands, and the southwestern Philippine Islands north and east to the islands of Mindoro and Sulu.

2. *Ceyx rufidorsus innominatus* Salvadori.—Islands of Java, Banka, Bali, Kangean, Lombok, Sumbawa, Flores, and Sumba.

3. *Ceyx dillwynni* Sharpe (= *Ceyx sharpei* Salvadori).—Extreme southern Malay Peninsula (only eastern side ?), Kateman Island, Great Karimon Island, Nias Island (*teste* Salvadori), Borneo, Labuan Island, and southwestern Philippine Islands (Palawan).

4. *Ceyx enopopygius* Oberholser.—(*Ceyx enopopygius* Oberholser, Smiths. Misc. Coll., vol. 60, No. 7, October 26, 1912, p. 7 [Aru Bay, eastern Sumatra]). Eastern coast of Sumatra.

5. *Ceyx tridactylus tridactylus* (Pallas).—Ceylon, southern India, Nepal, and Lower Bengal; east to Bhutan, Assam, and the Burmese

[1] As Doctor Hartert has shown (Novit. Zool., vol. 9, 1902, p. 431), the generic term *Ceyx* is of masculine, not feminine gender as commonly considered.

[2] Novit. Zool., vol. 9, 1902, pp. 430–431.

provinces; south through the Malay Peninsula to the Mergui Archipelago and Malacca.

6. *Ceyx tridactylus macrocarus*, new subspecies.

Subspecific characters.—Similar to *Ceyx tridactylus tridactylus*, but decidedly larger; the bluish black forehead spot at base of culmen much smaller, often wanting; and the pileum of a somewhat darker ferruginous.

Description.—Type, adult male, No. 178555, U.S.N.M.; Great Nicobar Island, Nicobar Islands, March 14, 1901; Dr. W. L. Abbott. Pileum and cervix ferruginous, strongly washed posteriorly and laterally with magenta; forehead on each side of the culmen with a spot of ochraceous buff; a conspicuous spot of pale canary yellow on each side of the neck; above this a spot of hyacinth blue; back hyacinth blue; scapulars and wings black, the scapulars, lesser and middle coverts broadly tipped with the same blue; the quills broadly margined interiorly except at tips with tawny ochraceous; bend of wing orange rufous; rump and upper tail-coverts magenta over orange rufous; tail ferruginous, the central feathers tipped with fuscous; chin white; rest of lower parts, including the lining of the wings, rich lemon yellow, paler on the throat, richer on the breast and sides of body; sides of head and neck the same but tinged with tawny; bill bright red.

Measurements.[1]—Wing, 56–62 (average, 58.4) mm.; tail, 22–27.5 (24.3); exposed culmen, 33–35.5 (34.7); tarsus, 8–10 (9.1).

Geographic distribution.—Nicobar Islands; ?Andaman Islands.

All the names that have been applied to *Ceyx tridactylus* [2] refer without doubt to the mainland form. All our specimens are from the Island of Great Nicobar, but *Ceyx tridactylus macrocarus* doubtless occurs on also other islands of the Nicobar group. I have seen no specimens of *Ceyx tridactylus* from the Andaman Islands, but the species occurs there, and will probably prove to be of the Nicobar form. There seem to be no differences in color, other than those already mentioned, between *Ceyx tridactylus macrocarus* and *Ceyx tridactylus tridactylus*. The small size of the blackish forehead spot is very noticeable in the former, so far as our specimens go; in six of our ten birds this marking is either absent or reduced to insignificance, while in none of the others is it so large as is usual in *Ceyx*

[1] No separation of males and females is here made, because their dimensions are practically alike.

[2] These are:

Alcedo tridactyla Pallas, Spicel. Zool., fasc. 6, 1769, p. 10, pl. 2, fig. 1 (Surinam [!]; locality wrong; I designate Bengal, India, as type-locality).

Alcedo erythaca Gmelin, Syst. Nat., vol. 1, pt. 1, 1788, p. 449 (Bengal, India).

Alcedo purpurea Gmelin, Syst. Nat., vol. 1, pt. 1, 1788, p. 449 (Pondichery, India).

Ceyx luzoniensis Stephens, in Shaw's Gen. Zool., vol. 13, pt. 2, 1825, p. 106 (new name for *Alcedo tridactyla* Shaw, Gen. Zool, vol. 8, 1811, p. 104).

Ceyx microsoma Burton, Proc. Zool. Soc. Lond., 1837 (Feb. 13, 1838) p. 89 (India Maderaspatana).

Boddaert's *Alcedo rubra* (Tabl. Planch. Enlum. d'Hist. Nat., 1783, p. 48 [Madagascar], is sometimes quoted as a synonym of *Ceyx tridactylus*, but it is clearly the same as *Ispidina madagascariensis* (Linnaeus).

tridactylus tridactylus. The deeper shade of the pileum and cervix is not wholly constant, but is easily seen in a series. We have thus in *Ceyx tridactylus macrocarus* another of the large dark races of birds, of which there are so many on the Andaman and Nicobar Islands. The difference in size, particularly of bill and wing, between this new form and typical *Ceyx tridactylus* is very evident upon even superficial comparison. Eight specimens of *Ceyx tridactylus tridactylus* from various localities, including the Mergui Archipelago, measure as follows:

Wing, 53.5–56.5 (average, 55.2) mm.; tail, 19–27 (average, 22.6); exposed culmen, 29.5–33 (average, 31.6); tarsus, 6–8.5 (average, 7.7).

The United States National Museum series of *Ceyx tridactylus macrocarus* exhibits the following detailed measurements:

Measurements of specimens of Ceyx tridactylus macrocarus.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*
178557	Male	Great Nicobar I., Nicobar Is.[1]	Mar. 15, 1901	Dr. W. L. Abbott	57	24	35.5	8.5
178555	do	do	Mar. 14, 1901	do	59.5	22.5	35.5	8
178556	do	do	Mar. 30, 1901	do	58	22	34.5	9.5
178562	Female	do	Mar. 12, 1901	do	59.5	25	35	9.5
178560	do	do	Mar. 9, 1901	do	59	25.5	35	9.5
178559	do	do	Mar. 8, 1901	do	57	26	35	10
178561	do	do	do	do	62	24.5	34	9
178558	do	do	Mar. 11, 1901	do	56	27.5	33	9
178563		do	Mar. 7, 1901	do	57	22.5	35	8.5
178564		do	do	do	58.5	23	34	9
Average					58.4	24.3	34.7	9.1

[1] Type.

Two groups which are quite as well characterized as many current genera of Alcedinidae compose at present the single genus *Ceyx*.[2] One of these includes *Ceyx tridactylus*, the type of *Ceyx*, together with the majority of the species, and must of course retain the name *Ceyx*. The other comprises at least *Ceyx solitarius* Temminck, *Ceyx argentatus* Tweeddale, and *Ceyx cyanopectus* Lafresnaye, with possibly some further forms among those that I have not been able to examine, and should stand as *Therosa* Bonaparte,[3] since *Ceycis* Gloger,[4] if not a nomen nudum, is a synonym of *Ceyx*. This group *Therosa* differs strikingly from *Ceyx* in the much more slender, more compressed bill, the outlines of which, both laterally and vertically, are

[2] The generic name *Ceyx* is commonly cited from Lacépède, Mém. l'Inst. Nat. Sci. et Arts, vol. 3, 1801, p. 511, but the original description occurs in Lacépède's Tableau, Oiseaux, 1799, p. 10 (type, *Alcedo tridactyla* Pallas).

[3] *Therosa* Bonaparte, Consp. Gen. Avium, vol. 1, 1850, p. 158 (Müller manuscript) (type by monotypy, *Ceyx solitaria* Temminck).

[4] Gemein. Hand- und Hilfsb. Naturg., 1842 (1841), p. 338.

less convex, the culmen much more sharply ridged—almost as in *Alcedo* and *Alcyone*—and the gonys more decidedly keeled. The three species above included should therefore be called:

Therosa argentata (Tweeddale).
Therosa solitaria (Temminck).
Therosa cyanopectus (Lafresnaye).

Family MICROPODIDAE.

*MICROPUS SUBFURCATUS (Blyth).

Cypselus subfurcatus BLYTH, Journ. Asiat. Soc. Bengal, vol. 18, August, 1849, p. 807 (Malay Peninsula).

Recorded from the Anamba Islands by Mr. C. B. Kloss.[1]

COLLOCALIA LOWI (Sharpe).

Cypselus lowi SHARPE, Proc. Zool. Soc. Lond., 1879, p. 333 (Labuan Island, northern Borneo).

One adult male from Pulo Riabu, August 22, 1900. Length, 133.5 mm.; wing, 134 mm. "Shot out of a flock of nearly a hundred that were hawking along the beach in the evening." The present example has the tail distinctly though not deeply emarginate; but this can be regarded as scarcely more than an individual peculiarity. Indeed, the shape of the tail, as a character used to distinguish *Collocalia lowi* from *Collocalia whiteheadi*, is of doubtful value, for some specimens of the latter have the tail almost square, while *Collocalia lowi* sometimes shows distinct emargination.

Mr. Erwin Stresemann has recently described[2] as a subspecies of *Collocalia lowi* the form of *Collocalia whiteheadi* from Palawan Island which the present writer some years ago indicated as possibly separable. This is a bird with unfeathered tarsi, like *Collocalia whiteheadi*, and clearly is a subspecies of that species, not of *Collocalia lowi*, with which it has nothing to do, and should, therefore, stand as *Collocalia whiteheadi palawanensis*. These two species, *Collocalia lowi* and *Collocalia whiteheadi*, are very similar in coloration, as, indeed, are so many of the other distinct species of this difficult genus, but *Collocalia lowi* is somewhat darker below than both *Collocalia whiteheadi whiteheadi* and *Collocalia whiteheadi palawanensis*, with more distinct dark shaft streaks and more uniform coloration, the throat not being noticeably lighter than the breast and abdomen, as is the case in both forms of *Collocalia whiteheadi*. In fact, the most satisfactory means of distinguishing these two species is the difference in the feathering of the tarsi. Thus, to consider *Collocalia whiteheadi*, a bird with unfeathered tarsi, a sub-

[1] Journ. Straits Branch Roy. Asiatic Soc., No. 41, January, 1904, p. 79.

[2] *Collocalia lowi palawanensis* Stresemann, Verhandl. Ornith. Gesells. Bayern, vol. 12, May 15, 1914, p. 10.

species of *Collocalia lowi*, a bird with well-feathered tarsi, is clearly doing it violence; and this the more since true *Collocalia lowi* with *feathered tarsi* occurs also on Palawan Island,[1] the very locality from which comes its supposed subspecies *palawanensis!* This last fact was apparently overlooked by Mr. Stresemann in diagnosing *Collocalia whiteheadi palawanensis*.

The bird from Mindanao Island, described by the writer as *Collocalia origenis*,[2] which Mr. Stresemann,[3] without examining any specimens, suggests is possibly the same as *Collocalia whiteheadi*, is undoubtedly distinct from the latter. That it may eventually prove to be a geographical race of that species may well be so; but the original specimens in the United States National Museum, which, so far as we know, are all that exist in any collection, certainly do not indicate such to be the case. This bird has an entirely unfeathered tarsus, like *Collocalia whiteheadi*, of the island of Luzon, but differs from that species in its decidedly darker, more blackish, and more uniform coloration above, the rump not being appreciably lighter than the back; and in its also much darker and more uniform lower surface, with the throat not noticeably if at all paler than the breast and abdomen, instead of decidedly lighter, as in *Collocalia whiteheadi whiteheadi* and *Collocalia whiteheadi palawanensis*. In fact, *Collocalia origenis* is decidedly darker above than even *Collocalia lowi*, and fully as dark and uniform, in some specimens darker, below than is that species; and in the general aspect of its coloration is really more like *Collocalia lowi* than like *Collocalia whiteheadi*. It is, however, of course, readily separable from the former by its unfeathered tarsi, and also by the almost total absence of blackish shaft-lines on the feathers of the posterior lower parts, in addition to the color differences already noted.

COLLOCALIA VESTITA AMECHANA Oberholser.[4]

Collocalia fuciphaga amechana OBERHOLSER, Proc. U. S. Nat. Mus., vol. 42, March 6, 1912, pp. 12, 13 (Pulo Jimaja, Anamba Islands).

Doctor Abbott obtained only two specimens of this swiftlet:

Adult female, No. 171071, U.S.N.M.; Pulo Jimaja, September 19, 1899. Length, 127 mm.

Adult female, No. 171072, U.S.N.M.; Pulo Jimaja, September 19, 1899. Length, 124 mm.

These are both more or less in process of molt. They have been fully discussed in previous papers.[5] The second specimen mentioned above is the type of the subspecies.

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[1] See Grant, Ibis, 1895, p. 460.

[2] Proc. Acad. Nat. Sci. Phila., July 26, 1906, p. 191.

[3] Verhandl. Ornith. Gesells. Bayern, vol. 12, May 15, 1914, p. 11.

[4] For the change of specific name, see Stresemann, Verhandl. Ornith. Ges. Bayern, vol. 12, May 15, 1914, pp. 2–6.

[5] Oberholser, Proc. Acad. Nat. Sci. Phila., 1906, p. 189; Proc. U. S. Nat. Mus., vol. 42, Mar. 6, 1912, p. 13.

Family HEMIPROCNIDAE.

HEMIPROCNE[1] LONGIPENNIS HARTERTI Stresemann.

Hemiprocne longipennis harterti STRESEMANN, Novit. Zool., vol. 20, June, 1913, p. 339 (Deli, northeastern Sumatra).

Two specimens:

Adult male, No. 171070, U.S.N.M.; Pulo Jimaja, September 25, 1899. Length in flesh, 210 mm. "Feet dark brownish purple."

Adult female, No. 171069, U.S.N.M.; Pulo Jimaja, September 18, 1899.

Both are in process of molt, and though somewhat worn, seem to be identical with birds from Sumatra and the Malay Peninsula, which represent this newly described and readily distinguishable race. Doctor Abbott reports that this bird was common in the mangrove swamps of the Anamba Islands.

There are now recognizable the following forms of *Hemiprocne longipennis:*

Hemiprocne longipennis longipennis (Rafinesque).—Islands of Java and Bali.

Hemiprocne longipennis harterti Stresemann.—Islands of Sumatra, Banka, Billiton, and Borneo, north to the Natuna Islands, Anamba Islands, the Malay Peninsula, Tenasserim, and Burma.

Hemiprocne longipennis thoa Oberholser.—Batu Islands, Barussan Chain, western Sumatra.

Hemiprocne longipennis perlonga (Richmond).—Simalur Island, Barussan Chain, western Sumatra.

Hemiprocne longipennis ocyptera Oberholser.—Nias Island, Barussan Chain, western Sumatra.

* HEMIPROCNE COMATA COMATA (Temminck).

Cypselus comatus TEMMINCK, Nouv. Rec. Planch. Col. d'Oiseaux, vol. 4, livr. 45, April, 1824, pl. 268 (Sumatra).

Noted in the Anamba Islands by C. B. Kloss,[2] but not reported by Doctor Abbott.

Family HIRUNDINIDAE.

HIRUNDO RUSTICA GUTTURALIS Scopoli.

Hirundo gutturalis SCOPOLI, Del. Flor. et Faun. Insubr., pt. 2, 1786, p. 96 (based on Sonnerat, Voyage a la Nouvelle Guinée, p. 118, pl. 76; type-locality, Antigua, Panay Island, Philippine Islands).

Doctor Abbott obtained but a single specimen of this migrant swallow—a juvenal male (No. 171093, U.S.N.M.) from Pulo Jimaja, taken on September 26, 1899.

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[1] For the use of the generic name *Hemiprocne* Nitzsch in place of *Macropteryx* Swainson, see Oberholser Proc. Biol. Soc. Wash., vol. 19, May 1, 1906, pp. 67–69.

[2] Journ. Straits Branch Roy. Asiatic Soc., No. 41, January, 1904, p. 79.

The comparison of the above specimen with examples of this and allied forms has led incidentally to an examination of *Hirundo rustica rustica, Hirundo rustica transitiva, Hirundo savignii, Hirundo gutturalis, Hirundo tytleri,* and *Hirundo erythrogastris,* with particular reference to their relationships with each other. After careful study of the specimens in the United States National Museum and of the literature on the subject, I am led to consider them all geographical races of one species, and thus to agree completely with the view expressed by Dr. R. B. Sharpe [1] and more recently by Dr. E. Hartert.[2] This is also the same opinion as that held by Mr. Henry Seebohm,[3] except that he unites *Hirundo tytleri* with *Hirundo erythrogastris.*

That *Hirundo rustica rustica,* with its usually unbroken dark jugular band, intergrades with the broken-banded *Hirundo rustica gutturalis,* both geographically and individually, there seems to be not the slightest reason to doubt, for there are altogether too many intermediate specimens. Furthermore, some of the darker examples of *Hirundo rustica gutturalis* are exceedingly close to the lighter specimens of *Hirundo rustica erythrogastris,* and are difficult to distinguish without actual comparison; in fact the two forms overlap individually in all characters. Similarly, the dark extreme of *Hirundo rustica erythrogastris* overreaches individually the light extreme of *Hirundo rustica tytleri,* and thus connects these two forms.

After careful examination and comparison of a large series of *Hirundo rustica erythrogastris* from various parts of its range, including a considerable series from western Alaska, I am entirely unable to see any even average differences which entitle the Alaska bird to subspecific separation as *Hirundo erythrogastra palmeri;*[4] since all the supposed distinctions of both size and color seem to be merely individual variations.

Reverting again to *Hirundo rustica tytleri,* it is evident that intermediates between this and *Hirundo rustica gutturalis* would be practically indistinguishable from *Hirundo rustica erythrogastris;* and that such intergradation actually takes place in northeastern Siberia where the breeding range of *Hirundo rustica tytleri* approaches that of *Hirundo rustica gutturalis* is evident from the fact that birds from Lake Baikal are practically like specimens of *Hirundo rustica erythrogastris,*[5] although for geographical reasons referable of course to *Hirundo rustica gutturalis;* and from the various winter specimens from Burma and Cochin China that so closely resemble *Hirundo rustica erythrogastris* that Doctor Sharpe and others have identified them as such.

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[1] Cat. Birds Brit. Mus., vol. 10, 1885, pp. 126–140.

[2] Vögel paläarctischen Fauna, vol. 1, 1910, pp. 800–804.

[3] Hist. Brit. Birds, vol. 2, 1884, pp. 171–172.

[4] Grinnell, Condor, vol. 4, May 15, 1902, p. 71 (Amaknak Island, Unalaska Harbor, Alaska).

[5] See Sharpe, Cat. Birds Brit. Mus., vol. 10, 1885, p. 127.

The breeding bird of Egypt, *Hirundo rustica savignii*, while very different from *Hirundo rustica rustica*, is so close to the widely separated *Hirundo rustica tytleri* that individual variations overlap all the subspecific characters. Furthermore, *Hirundo rustica transitiva*, from Palestine, is a connecting form between *Hirundo rustica savignii* and *Hirundo rustica rustica*. From the above statements it is obvious that all six of these forms of *Hirundo* are subspecies of *Hirundo rustica*. Their characters and ranges are as follows: [1]

1. *Hirundo rustica rustica* Linnaeus.

[*Hirundo*] *rustica* Linnaeus, Syst. Nat., ed. 10, vol. 1, 1758, p. 191 (Europe).

Subspecific characters.—Size large; metallic blackish jugular band wide and usually not interrupted medially; posterior lower parts whitish, more or less tinged with rufous or isabella color.

Type locality.—Sweden (restricted by Hartert,1910 [2]).

Geographic distribution.—Breeds throughout Europe, and west to Iceland, east to western Siberia, Turkestan, and the Himalaya Mountains; south to Baluchistan, Persia, Asia Minor, Tunis, Algeria, and Morocco. Winters south to southern Africa, southern India, the southern Malay Peninsula, the Philippine Islands, and the Molucca Islands. Casual in Greenland.

2. *Hirundo rustica gutturalis* Scopoli.

Hirundo gutturalis Scopoli, Del Flor. et Faun. Insubr., pt. 2, 1786, p. 96 ("*In Nova Guiana*, p. 118, *Tab.* 76").

Subspecific characters.—Similar to *Hirundo rustica rustica*, but much smaller; blackish jugular band usually divided by the chestnut of throat; posterior lower surface averaging more whitish.

Type-locality.—Antigua, Panay Island, Philippine Islands.

Geographic distribution.—Breeds in northeastern Asia, north to the Siberian provinces of Amur, Transbaikalia, and Irkutsk; west to Irkutsk and northern China; south to northern China and to Korea; and east to Japan. Winters south to southern India, the Malay Peninsula, Sumatra, Java, the Molucca Islands, New Guinea, and occasionally northern Australia.

3. *Hirundo rustica tytleri* Jerdon.

Hirundo Tytleri Jerdon, Birds of India, vol. 3, 1864, p. 870 (Dacca, Bengal India).

Subspecific characters.—Similar to *Hirundo rustica gutturalis*, but rather larger; posterior lower parts rufous chestnut instead of usually whitish; white spots on the rectrices, together with the concealed white subterminal portions of the dark feathers of the upper surface, more or less tinged with buff, instead of practically pure white.

Type-locality.—Dacca, Bengal, India.

[1] For the synonymy of these birds, see Sharpe, Cat. Birds Brit. Mus., vol. 10, 1885, pp. 128–140; and Hartert, Vögel paläarctischen Fauna, vol. 1, 1910, pp. 800–804.

[2] Vögel paläarctischen Fauna, vol. 1, 1910, p. 800.

Geographic distribution.—Breeds in Kamchatka and other parts of northeastern Siberia; and migrates west to Irkutsk in central southern Siberia. Winters south to southern China, Pegu, and Tenasserim.

4. *Hirundo rustica erythrogastris* [1] Boddaert.

Hirundo erythrogaster Boddaert, Table Planch. Enlum., 1783, p. 45 (Cayenne).

Subspecific characters.—Similar to *Hirundo rustica tytleri*, but averaging decidedly paler on the lower parts; white tail-spots and white subterminal portions of feathers of upper parts less strongly tinged with buff; and size somewhat smaller. Resembling *Hirundo rustica gutturalis*, but throat averaging paler; remaining lower parts more heavily shaded with fulvous; tail-spots and concealed white subterminal portions of feathers of upper surface more or less tinged with buff. Differs from *Hirundo rustica rustica* as from *Hirundo rustica gutturalis*, and additionally in smaller size and interrupted blackish jugular band.

Type-locality.—Cayenne, French Guiana.

Geographic distribution.—Breeds in North America, east to the Atlantic Ocean; north to central Quebec (southern Ungava), northern Mackenzie, and northwestern Alaska; west to the Pacific Ocean; and south to the States of Tepic and Jalisco (Mexico), southern Texas, and North Carolina. Winters south to Chile, Argentina, and Brazil. Casual or accidental in Greenland, the Galapagos and the Bermuda islands.

5. *Hirundo rustica transitiva* Hartert.

Hirundo rustica transitiva Hartert, Vögel paläarctischen Fauna, vol. 1, June 1910, p. 802 (Plain of Esdralon, Palestine).

Subspecific characters.—Similar to *Hirundo rustica rustica*, but smaller, and with lower parts much more deeply rufescent.

Type-locality.—Plain of Esdralon, Palestine.

Geographic distribution.—Palestine.

6. *Hirundo rustica savignii* Stephens.

Hirundo Savignii Stephens, in Shaw's Gen. Zool., vol. 10, pt. 1, 1817, p. 90 (Egypt).

Subspecific characters.—Resembling *Hirundo rustica transitiva*, but lower surface much darker, of a rich rufous chestnut. Very much like *Hirundo rustica tytleri*, but with a usually unbroken blackish jugular band, and deeper tawny buff suffusion on the light tail-spots and the white concealed subterminal portions of the feathers of the upper surface.

Type-locality.—Egypt.

Geographic distribution.—Egypt and Nubia.

[1] The subspecific term *erythrogaster* as here used is a Latin adjective of the third declension, and therefore has for its proper feminine nominative *erythrogastris*, not erythrogas*tra*, as commonly written.

The name *Chelidon* Forster has recently been revived by Dr. E. Hartert[1] as the proper generic appellation for *Hirundo rustica* and its allies, on the ground that Schaeffer[2] did not fix the type of *Hirundo* as *Hirundo rustica*, and that Forster,[3] as the first author to subdivide the group, thereby determined its type. While it is quite true that Schaeffer in 1774 did not in the modern sense fix the type of the genus *Hirundo*, it is likewise true that the action of Forster in merely applying different generic names to several of the species is equally of no effect. The International Code of Nomenclature provides that in order to make a type designation valid an author must definitely indicate a species as the type. So far as we have been able to ascertain, the first designation according to the specifications of the International Code was by Selby in 1825,[4] who selected *Hirundo rustica* as the type; and Gray, in 1840,[5] designated the same species. There is thus open, under the rules, no other course than to consider *Hirundo rustica* the type of *Hirundo* Linnaeus.

HYPUROLEPIS JAVANICA ABBOTTI,[6] new subspecies.

Subspecific characters.—Similar to *Hypurolepis javanica javanica*,[7] from Java, but larger; forehead, chin, and throat darker; posterior lower parts more grayish (less brownish), and medially much more whitish.

Description.—Type, adult male, No. 171048, U.S.N.M.; Pulo Manguan, Anamba Islands, September 1, 1899; Dr. W. L. Abbott. Forehead and sinciput bay; rest of upper parts shining metallic dusky bluish green; rectrices brownish black, their upper surface more or less glossed with metallic deep green, all but the middle pair with a conspicuous subterminal transverse spot of white; wings brownish black, the exposed surface glossed with metallic green like the tail, the lesser wing-coverts edged with the metallic bluish green of the upper parts, and tertials with minute buffy tips; chin and throat between russet and tawny; sides and flanks hair brown, many of the feathers with paler tips; breast paler brown, the feathers with light tips; middle of abdomen brownish white, the central portion of the feathers mostly pale brownish with dark shaft lines; lower tail-coverts fuscous, the subterminal portions black, the tips buffy; lining of wing fuscous, with minute russet edgings; "iris dark brown; bill and feet black."

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[1] Vögel paläarktischen Fauna, vol. 1, pt. 6, June, 1910, pp. 800-801.
[2] Elem. Ornith., 1774, Classis II, Ordo VII, pl. 40.
[3] Synop. Cat. Brit. Birds, 1817, p. 17.
[4] Illustr. Brit. Ornith., pt. 1, 1825, p. xxviii.
[5] List Genera Birds, 1840, p. 8.
[6] Named for the collector and donor, Dr. W. L. Abbott.
[7] *Hirundo javanica* Sparrman, Mus. Carlson, fasc. 4, 1789, pl. 100 (Java).

This new race may be distinguished from Celebes specimens of *Hypurolepis javanica frontalis* (Quoy and Gaimard)[1] by reason of larger size; duller, darker throat; darker, somewhat less brownish sides and flanks; less dull, less brownish, and therefore more strongly contrasted whitish middle portion of abdomen. From *Hypurolepis javanica domicola* (Jerdon),[2] which is a recognizable race from southern India and the Malay Peninsula, *Hypurolepis javanica abbotti* differs in duller, darker throat; darker, more grayish (less rufescent) brown of sides and flanks; less brownish tinge of the whitish middle portion of the abdomen, whereby this latter is more sharply in contrast to the lateral brown areas; and in the more conspicuously spotted appearance of the posterior lower surface.

One specimen (No. 171060, U.S.N.M.), taken on Pulo Telaga, September 14, 1899, is a juvenal male, and differs from the adult in entirely lacking the bay frontlet; in having the upper parts very much duller, the wings with scarcely any metallic sheen; and lower surface very much lighter throughout, the crissum dull brown, without any black. One of the other birds (No. 171090, U.S.N.M.) has the outer primaries in process of molt; and most of the remaining examples show indication of molt in the body plumage.

Doctor Abbott reported this species common on Pulo Jimaja, September 17–28, 1899; and observed it on Pulo Siantan, August 19 to September 13, 1899. He obtained seven specimens on the various islands of the Anamba group.

The subjoined table of measurements includes all our Anamba examples of *Hypurolepis javanica abbotti*, and for comparison some specimens of *Hypurolepis javanica javanica* from Java.

Measurements of specimens of Hypurolepis javanica abbotti.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[3]	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*
171026....	Male....	Pulo Mata, Anamba Islands.	Aug. 28, 1899	Dr. W. L. Abbott.	139.7	109.5	45.5	9	10
171048....	Male....	Pulo Manguan, Anamba Islands.[4]	Sept. 1, 1899	.....do.....	133.4	108.5	46	8.5	9.5
171060....	Male, juvenal.	Pulo Telaga, Anamba Islands.	Sept. 14, 1899	.....do.....	133.4	106	44	8.5	10.1
171047....	Female..	Pulo Manguan, Anamba Islands.	Sept. 1, 1899	.....do.....	136.5	109	44	8.8	11
171091....	Female..	Pulo Jimaja, Anamba Islands.	Sept. 25, 1899	.....do.....	133.4	105	43.5	7.5	10
171092....	Female..	.....do.....	Sept. 26, 1899	.....do.....	130.2	110.5	46	8.5	10
171090....	Female..	.....do.....	Sept. 18, 1899	.....do.....	136.5	.....	49	8.5	10
Average of 7 specimens.....					134.7	108.1	45.4	8.5	10.1

[1] *Hirundo frontalis* Quoy and Gaimard, Voy. *l'Astrolabe*, Zool., vol. 1, 1830, p. 204, pl. 12, fig. 1 (Dorey harbor, New Guinea).

[2] *Hirundo domicola* Jerdon, Madras Journ. Lit. and Science, vol. 13, pt. 1, No. 30, "April, 1844," p. 173 (Nilgiri Hills, southern India).

[3] Measured in the flesh by the collector.

[4] Type.

Measurements of specimens of Hypurolepis javanica javanica.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*
218518	Male	Goenoeng Boender, Mount Salak, Java.	May 18,1909	W. Palmer	105	47	9	10
218520	Male	do	May 15,1909	do	97	42	7	10
218519	Male	do	May 2,1909	do	104	49	9	10
218522	Female	do	May 3,1909	do	101	42	7.5	9.3
218521	Female	do	May 18,1909	do	101	44.5	8	9.8
Average of 5 specimens					101.6	44.9	8.1	9.8

The present species is structurally different enough from *Hirundo rustica* Linnaeus, by reason of its broad bill, very short, slightly forked tail, to necessitate its generic segregation, as already claimed by Mr. Mathews.[1] The proper generic name for it seems to be *Hypurolepis* Gould[2] (type, by subsequent designation,[3] *Hirundo domicola* Jerdon [=*Hirundo javanica domicola* Jerdon]), since *Herse* Lesson[4] is preoccupied by *Herse* Oken, 1815, for a genus of Lepidoptera.[5] Mr. Mathews, in designating the type of *Hypurolepis* Gould, states it to be *Hirundo domicola* Jerdon "by monotypy"[6]; but Gould in his original institution of the genus in the text to plate 32 of his "Birds of Asia" specifically included *Hirundo domicola* Jerdon, *Hirundo subfusca* Gould [= *Hirundo tahitica* Gmelin], and provisionally *Hirundo neoxena* Gould.

Family LANIIDAE.

* LANIUS CRISTATUS Linnaeus.[7]

[*Lanius*] *cristatus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 93 (Bengal, India).

Recorded from the Anamba Islands by C. B. Kloss.[7]

Family CAMPOPHAGIDAE.

ARTAMIDES SUMATRENSIS CALOPOLIUS, new subspecies.

Subspecific characters.—Similar to *Artamides sumatrensis sumatrensis*, from Sumatra, but larger, particularly the bill; female with upper surface and anterior lower parts somewhat paler; white bars on posterior lower parts broader, the black bars also somewhat so; black bars on rump and upper tail-coverts wider.

[1] List Birds Australia, 1913, p. 163.
[2] Birds Asia, vol. 1, April, 1868, text to pl. 32.
[3] Mathews, List Birds Australia, 1913, p. 163.
[4] Rev. Zool., 1840, p. 145 (based on "Les Herses" of Lesson, Compl. Oeuv. Buffon, vol. 8, 1837, p. 496).
[5] *Herse* Oken, Lehrb. Naturg., vol. 3, 1815, pt. 1, p. 762.
[6] List Birds Australia, 1913, p. 163.
[7] Journ. Straits Branch Roy. Asiatic Soc., No. 41, January, 1904, p. 79.

Description.—Type, adult female, No. 171023, U.S.N.M.; Pulo Mata, Anamba Islands, August 29, 1899; Dr. W. L. Abbott. Sides of head and neck, pileum, cervix, back, and scapulars, slate gray;[1] rump and upper tail-coverts varying from slate gray to gray No. 8,[1] broadly and boldly barred with white and black, the white predominating on the shorter coverts; tail slate black, irregularly tipped with white; wings slate black, all the quills tipped, the secondaries broadly, the primaries narrowly, margined exteriorly with white, and all the remiges broadly edged interiorly on basal portion with white; lesser and median wing-coverts, with outer webs of tertials, gray, like the back; greater coverts slate gray, narrowly margined with whitish; primary coverts and alula slate color, narrowly edged and broadly tipped with white; chin, throat, and jugulum gray No. 6,[1] slightly and obsoletely barred imperfectly in places with paler gray; rest of lower surface white, boldly barred with black, these bars much narrower on the crissum; lining of wing white, narrowly barred with black; "iris gray; bill black; feet dull black."

Measurements of type.—Total length, 292.1 mm.; wing, 160; tail, 112.5; exposed culmen, 26.5; tarsus, 27.

The female type above described is the only specimen obtained by Doctor Abbott. It is about the size of *Artamides sumatrensis bungurensis* (Hartert),[2] from the Natuna Islands, but differs from the same sex of that race in the absence of ashy clouding on the posterior lower surface; the white and black bars being sharply contrasted, even more so than in *Artamides sumatrensis sumatrensis;* white bars of lower surface apparently broader; and lower back, rump, and upper tail-coverts more sharply banded with black and white. This new race may be distinguished from *Artamides sumatrensis difficilis* (Hartert),[3] from Balabac Island, Philippine Islands, by its larger size, and in the female by the wider white bars on the posterior lower surface.

Our single specimen of *Artamides sumatrensis calopolius* is apparently not fully adult, for the outer tail-feathers are tipped and subterminally mottled with dull white, and most of the primaries, all the secondaries, tertials, and primary coverts are broadly margined with white; while on the throat are seen some faint remnants of dark and light barring.

Family MUSCICAPIDAE.

CYORNIS BANYUMAS LAMPRA, new subspecies.

Subspecific characters.—Similar to *Cyornis banyumas philippinensis,* but the male with upper parts of a lighter, brighter blue; anterior lower surface paler, more ochraceous (less tawny); posterior lower

[1] Of Mr. Robert Ridgway's Nomenclature of Colors for Naturalists, 1886.

[2] *Graucalus bungurensis* Hartert, Novit. Zool., vol. 1, 1894, p. 477.

[3] *Graucalus sumatrensis difficilis* Hartert, Novit. Zool., vol. 2, 1895, p. 470.

parts more whitish, the sides and flanks with much less ochraceous. Female very much paler, duller, and more grayish above than the same sex of *Cyornis banyumas philippinensis*, with ochraceous of lower surface lighter, and that of lower breast, sides, and flanks much less extensive, the sides and flanks with very little; lores dull grayish instead of white.

Description.—Type, adult male, No. 171095, U.S.N.M.; Pulo Jimaja, Anamba Islands, September 22, 1899; Dr. W. L. Abbott. Sides of head and neck, with entire upper parts (except forehead) rather light, grayish, indigo blue; forehead and short superciliary stripe azure blue; lores and nasal plumes black; remiges and rectrices grayish clove brown, all edged externally with the blue of the upper parts; lesser and median wing-coverts cobalt blue; remaining wing-coverts like the secondaries; chin and moustachial stripes deep blue black; throat, jugulum, and upper breast, ochraceous; rest of lower surface white, laterally washed with ochraceous; under wing-coverts buffy white, the feathers centrally fuscous, the edge of wing beneath fuscous mixed with whitish, buff, and blue; axillars buff; "bill black, feet brownish lavender."

The male of this new race differs from the male of *Cyornis banyumas banyumas* in somewhat lighter blue upper surface; in pure white median posterior lower parts, including the crissum; and very much less extensively ochraceous sides and flanks. The female differs from that of *Cyornis banyumas banyumas* in the much more bluish gray (instead of brownish gray) upper surface, the tail externally blue instead of dull ferruginous; and in practically pure white instead of ochraceous abdomen and crissum. The male intergrades in color with *Cyornis banyumas banyumas* through *Cyornis banyumas philippinensis* and *Cyornis banyumas mindorensis* Mearns; while the female is intermediate between *Cyornis banyumas philippinensis* and *Cyornis banyumas banyumas*, though nearer the former. A trinomial seems best to express this bird's relationships.

There is considerably more difference between the sexes in this form than in *C. b. philippinensis*, the female being relatively as well as actually much paler and more grayish above. Two males (Nos. 171004 and 170961, U.S.N.M.) in part juvenal, part first autumn plumage, differ from the adults of the same sex in having the throat and chin whitish, the tawny of breast more or less mixed with blackish, this chiefly in the form of scale-like feather edgings; many of the superior wing-coverts and some of the tertials with broad apical spots of ochraceous; and the feathers of head and hind-neck with broad shaft streaks or apical spots of tawny or ochraceous. Two immature females (Nos. 170910 and 170967, U.S.N.M.) differ from adult females in their paler anterior lower parts and duller, more brownish upper surface. There is comparatively little individual

color difference among the adult males of this series, such as exists consisting chiefly of the depth of the blue on the upper parts, and the shade of the tawny on breast and throat.

Notes on the colors of the soft parts are given by Doctor Abbott on the labels, as follows:

Adult male, No. 171095, U.S.N.M. (type); Pulo Jimaja: "bill black; feet brownish lavender."

Adult male, No. 174825, U.S.N.M.; Pulo Rittan: "bill black; feet lavender."

Adult male, No. 171059, U.S.N.M.; Pulo Telaga: "bill black; iris dark brown."

Adult male, No. 171046, U.S.N.M.; Pulo Manguan: "bill black; feet lavender gray."

Adult male, No. 171005, U.S.N.M.; Pulo Mobur: "bill black."

Adult female, No. 170911, U.S.N.M.; Pulo Piling: "bill black; feet pale purplish fleshy."

Adult female, No. 170960, U.S.N.M.; Pulo Siantan; "bill dark horn brown; iris dark brown."

Immature female, No. 170967, U.S.N.M.; Pulo Siantan: "bill black, brownish beneath."

Doctor Abbott further says that the species was fairly common in the forest on Pulo Mobur, August 24 to September 1, 1899; common in the forest on Pulo Jimaja, September 17–28, 1899; and about Telok Ayer Bini on Pulo Siantan, September 5–6, 1899; common also on Pulo Piling, August 17, 1899; and seen on Pulo Mata, August 24 to September 1, 1899; on Pulo Kelong, September 1, 1899; and on Pulo Telaga, September 14–15, 1899.

Doctor Abbott obtained altogether 19 specimens of this new *Cyornis*, the detailed measurements of which are given herewith.

Measurements of specimens of Cyornis banyumas lampra.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*
170965	Male	Pulo Siantan, Anamba Islands.	Sept. 8, 1899	Dr. W. L. Abbott	152.4	72.5	63	12	17.5
170966	do	do	do	do	152.4	74	61	12.5	18
170961	Male[2]	do	Aug. 21, 1899	do	152.4	73	57	12	18.5
170962	Male	do	Aug. 22, 1899	do	158.8	74.5	63.5	12.5	18
170964	do	do	Aug. 24, 1899	do	158.8	76.5	64	12.5	18.5
171003	do	Pulo Mobur, Anamba Islands.	Aug. 25, 1899	do	158.8	76.5	64	12	18
171004	Male[2]	do	Aug. 26, 1899	do	152.4	74.5	61	12	18
171005	Male	do	do	do	158.8	72	63.5	11.5	18
171094	do	Pulo Jimaja, Anamba Islands.	Sept. 21, 1899	do	158.8	73.5	62	12.5	18
171095	do	do.[3]	Sept. 22, 1899	do	155.6	74	62	12.5	17
171036	do	Pulo Kelong, Anamba Islands.	Aug. 30, 1899	do	158.8	73	62.5	12	17.5
171046	do	Pulo Manguan, Anamba Islands.	Sept. 1, 1899	do	152.4	75	62	.....	18

[1] Measured in the flesh by the collector. [2] Immature. [3] Type.

Measurements of specimens of Cyornis banyumas lampra—Continued.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*
174825	Male....	Pulo Rittan, Anamba Islands.	May 21, 1900	Dr. W. L. Abbott	155.6	74	60	13	18
171059	...do....	Pulo Telaga, Anamba Islands.	Sept. 14, 1899	.....do.....	152.4	73.5	62	11.5	18
Average of 14 males					155.6	74.0	62.0	11.3	17.9
170963	[Female].	Pulo Siantan, Anamba Islands.	Aug. 22, 1899	Dr. W. L. Abbott	142.9	71	57.5	11.5	18
170960	Female .	.....do.....	Aug. 21, 1899	.....do.....	152.4	71.5	58	11.5	16.5
170967	Female[2].	.....do.....	Sept. 8, 1899	.....do.....	146.1	67.5	56	12	17
170911	Female..	Pulo Piling, Anamba Islands.	Aug. 17, 1899	.....do.....	155.6	73	59	12.5	17.5
170910	Female[2].	.....do.....	.....do.....	.....do.....	152.4	71	57	12	18
Average of 5 females					149.9	70.8	57.5	11.9	17.4

[1] Measured in the flesh by the collector. [2] Immature.

XANTHOPYGIA ZANTHOPYGIA (Hay).[3]

Muscicapa Zanthopygia Hay, Madras Journ. Lit. and Sci., vol. 13, pt. 2, "December, 1844" (1845), p. 162 (Malacca, Malay Peninsula).

One specimen, No. 170986, U.S.N.M, from Siantan Island, September 12, 1899. Length in flesh, 127 mm.; "iris dark brown; feet blue; upper mandible dark horn brown, lower mandible pale plumbeous."

HYPOTHYMIS AZUREA OPISTHOCYANEA Oberholser.

Hypothymis azurea opisthocyanea Oberholser, Proc. U. S. Nat. Mus., vol. 39, February 25, 1911, p. 602 (Pulo Piling, Anamba Islands).

Doctor Abbott obtained nine specimens—5 males, 4 females—of this recently described form from the Anamba Islands, collected August 18 to September 11, 1899, on Pulo Piling, Pulo Riabu, Pulo Manguan, and Pulo Siantan. Two of the three adult males from Pulo Siantan are rather less bluish on the posterior lower surface, particularly on the lower tail-coverts, than the other examples, but do not differ in size. There is some individual difference among all the males in the color of the upper parts, especially the pileum, this due largely to wear, as the tone of the blue seems particularly liable to change from this cause. One bird from Pulo Manguan, taken, September 1, one from Pulo Riabu, August 18, and two from Pulo Siantan, August 24, are just completing the molt. Except for their larger size the females of this race are very close to those of *Hypothymis azurea azurea*, though the lower surface is usually more extensively shaded with blue. An immature male from Pulo Manguan, taken, August 31, is like the adult female, but has the secondary wing-coverts much more deeply bluish. One of the females had the

[3] This is the original spelling of the specific name, as may be seen from the original citation.

"bill black; feet dark leaden blue;" another female, possibly immature, had the "bill black above, bluish beneath."

Doctor Abbott writes that this species was fairly common on Pulo Siantan, August 19 to September 6, 1899; common on Pulo Jimaja, September 17–28, 1899; observed also on Pulo Piling, August 17, 1899; on Pulo Riabu, August 18, 1899; and on Pulo Telaga, September 14–15, 1899.

Detailed measurements of eight adults in the collection are as follows:

Measurements of specimens of Hypothymis azurea opisthocyanea.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*
170957	Male	Pulo Siantan, Anamba Islands.	Aug. 24, 1899	Dr. W. L. Abbott.	158.8	79	.....	11	17
170958	do	do	Aug. —, 1899	do	168	76.5	76	10.5	16
170959	do	do	Sept. 11, 1899	do	165.1	75.5	78.5	12	16.5
171045	do	Pulo Manguan, Anamba Islands.	Sept. 1, 1899	do	.....	77	78	11	17.5
170909	do	Pulo Piling, Anamba Islands.[2]	Aug. 17, 1899	do	175	80	76	10.5	18
170920	Female	Pulo Riabu, Anamba Islands.	Aug. 18, 1899	do	171.5	78	75	12	17
170922	do	do	do	do	171.5	74.5	75	11.5	16
170921	do	do	do	do	.....	77	78	11	16.5

[1] Measured in the flesh by the collector. [2] Type.

Together with the races recently described, the following forms of *Hypothymis azurea* seem now to be recognizable [3]:

1. *Hypothymis azurea azurea* (Boddaert).—Philippine Islands, including Palawan and the Sulu group.

2. *Hypothymis azurea styani* (Hartlaub).—Island of Hainan.

3. *Hypothymis azurea oberholseri* Stresemann.—Formosa.

4. *Hypothymis azurea coeruleocephala* (Sykes).—India north to the Himalaya Mountains, and east to Cochin China.

5. *Hypothymis azurea ceylonensis* Sharpe.—Ceylon.

6. *Hypothymis azurea prophata* Oberholser.—Malay Peninsula to Sumatra, Java, and Borneo.

7. *Hypothymis azurea forrestia* Oberholser.—Mergui Archipelago.

8. *Hypothymis azurea nicobarica* Bianchi[4] (=*Hypothymis azurea calocara* Oberholser).—Nicobar Islands excepting Car Nicobar.

9. *Hypothymis azurea idiochroa* Oberholser.—Car Nicobar Island, Nicobar Islands.

10. *Hypothymis azurea tytleri* (Beavan).—Andaman and Cocos Islands.

[3] See Oberholser, Proc. U. S. Nat. Mus., vol. 39, 1911, pp. 593–615; Stresemann, Novit. Zool., vol. 20, 1913, pp. 293–297.

[4] *Hypothymis azurea nicobarica* Bianchi, Ann. Mus. Zool. Acad. Imp. Sci. de St. Pétersb., vol. 12, No. 1, June, 1907, p. 76 (Nicobar Islands).

11. *Hypothymis azurea opisthocyanea* Oberholser.—Anamba and Tambelan Islands.

12. *Hypothymis azurea gigantoptera* Oberholser.—Natuna Islands.

13. *Hypothymis azurea symmixta* Stresemann.—Islands of Bali, Lombok, Sumbawa, Flores, and Alor.

14. *Hypothymis azurea ponera* Oberholser.—Batu Islands, western Sumatra.

15. *Hypothymis azurea isocara* Oberholser.—Banjak Islands, western Sumatra.

16. *Hypothymis azurea leucophila* Oberholser.—Pagi Islands, western Sumatra.

17. *Hypothymis azurea amelis* Oberholser.—Nias Island.

18. *Hypothymis azurea consobrina* Richmond.—Simalur Island, western Sumatra.

19. *Hypothymis azurea richmondi* Oberholser.—Engano Island, western Sumatra.

Family PYCNONOTIDAE.

AEGITHINA VIRIDISSIMA THAPSINA, new subspecies.

Subspecific characters.—Similar to *Aegithina viridissima viridissima*, from Sumatra, but much larger; oil green of upper surface, in the male, more yellowish; lower breast and abdomen paler, more yellowish.

Description.—Type, adult male, No. 170951, U.S.N.M.; Pulo Siantan, Anamba Islands, August 20, 1899; Dr. W. L. Abbott. Entire upper surface, excepting the upper tail-coverts, oil green, the rump somewhat yellowish; upper tail-coverts glossy black; lores blackish; lengthened supra-orbital and suborbital spots rich lemon-yellow; tail black, slightly tipped with oil green; wing-quills blackish clove brown above, the tertials and outer webs of primaries and secondaries brownish black, the primaries, except the outer two, margined basally with oil green, the secondaries edged almost throughout with the same color, the tertials margined on outer webs with oil green, where marked distally with a conspicuous yellowish white spot, and on inner vanes broadly bordered with citron yellow; all the upper wing-coverts glossy black, the median series broadly tipped with white, the greater row more narrowly with yellowish white; inferior surface of remiges grayish clove brown, broadly edged on basal portion of inner webs with dull white; under wing-coverts inwardly white, barely washed with canary yellow, exteriorly, including the edge of wing, canary yellow; axillars canary yellow, basally somewhat whitish; sides of head and neck, with chin, throat, and jugulum, oil green, like the upper surface; sides of body, breast, and abdomen, yellowish oil green, the middle portion, together with the crissum, canary yellow; flanks with a patch of elongated silky-white feathers; thighs

black, more or less overlaid with canary yellow; "iris dark reddish brown; bill black above, leaden beneath; feet blue; claws black."

The female of this new form, compared with a female of *Aegithina viridissima* from Pulo Lankawi, western Malay Peninsula, is very much more yellowish below.

Three specimens were obtained by Doctor Abbott, as follows:

Adult male (type), No. 170951, U.S.N.M.; Pulo Siantan, August 20, 1899. "Iris dark reddish brown; feet blue; claws black; bill black above, leaden beneath."

Adult male, No. 170952, U.S.N.M.; Pulo Siantan, August 21, 1899. "Feet blue leaden; bill black above, leaden beneath."

Adult female, No. 170953, U.S.N.M.; Pulo Siantan, September 5, 1899. "Feet blue; bill leaden blue, culmen and tip black."

The type has some of the wing-quills in process of molt, so that its true wing measurement is possibly somewhat greater than that given below. Doctor Abbott states that this species lived in the forest, and was tolerably common on Pulo Siantan from August 19 to September 6, 1899.

Measurements of specimens of Aegithina viridissima thapsina.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*
170952	Male	Pulo Siantan, Anamba Islands.	Aug. 21, 1899	Dr. W. L. Abbott.	158.8	63	47	14.5	18.5
170951	Male	do.[2]	Aug. 20, 1899	do	140	64	49.5	15	19
170953	Female	do	Sept. 5, 1899	do	140	65	50	15	19

[1] Measured in the flesh by the collector. [2] Type.

PYCNONOTUS PLUMOSUS CHIROPLETHIS, new subspecies.

Subspecific characters.—Similar to *Pycnonotus plumosus plumosus*, from Singapore and the Malay Peninsula, but much larger.

Description.—Type, adult male, No. 170941, U.S.N.M.; Pulo Siantan, Anamba Islands, August 24, 1899; Dr. W. L. Abbott. Upper parts olive brown, washed with olive green, least so on the pileum, the rump rather lighter and less grayish; wings and tail olive brown, the wing-quills, rectrices, and superior wing-coverts margined with olive green, most broadly on the secondaries and rectrices; sides of head and neck grayish hair brown, the shafts of auriculars grayish white; chin and throat cream buff; crissum dull olivaceous gallstone yellow; rest of lower parts dull olive gray, lighter and inclining to buff medially, the middle of abdomen dull buff; lining of wing buff, edge of wing greenish olive yellow; thighs

brownish gray, tinged with olive yellow; "bill brownish black; feet dark fleshy brown."

Doctor Abbott obtained the following eight specimens:

Adult male, No. 170916, U.S.N.M.; Pulo Riabu, August 18, 1899.

Adult male, No. 170917, U.S.N.M.; Pulo Riabu, August 18, 1899. "Iris brownish red; bill dark horn brown, paler beneath; feet fleshy brown."

Adult male, No. 171000, U.S.N.M.; Pulo Mobur, August 25, 1899. "Iris red; bill black; feet dark fleshy brown."

Adult male, No. 170938, U.S.N.M.; Pulo Siantan, August 20, 1899. "Feet fleshy brown."

Adult male, No. 170940, U.S.N.M.; Pulo Siantan, August 21, 1899.

Adult male (type), No. 170941, U.S.N.M.; Pulo Siantan, August 24, 1899. "Bill brownish black; feet dark fleshy brown."

Adult male, No. 170943, U.S.N.M.; Pulo Siantan, September 10, 1899.

Adult female, No. 170939, U.S.N.M.; Pulo Siantan, August 21, 1899.

There is comparatively little individual color variation in the series, such as there is consisting chiefly in the more deeply ochraceous tinge on the abdomen, and the more golden hue of the olive yellow crissum. The worn summer plumage is considerably paler than the freshly molted feathers.

In all but one bird the molt is more or less in evidence. In four (Nos. 170938, 170940, 170941, and 171000, U.S.N.M.), taken, August 20 to 25, it is from about two-thirds to three-fourths completed; and many feathers of the old plumage remain; in one (No. 170943, U.S.N.M.), taken, September 10, it is about five-sixths advanced; in two others (Nos. 170916 and 170917), taken, August 18, it is, to external appearances, complete except for the wing-and tail-quills, but some of the contour feathers are still partly in their sheaths. One female (No. 170939), taken, August 21, has apparently not yet begun to molt.

Doctor Abbott says that this species was common in the scrubby jungle on Pulo Siantan. Measurements are as below:

Measurements of Pycnonotus plumosus chiroplethis.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe without claw.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*	*mm.*
170917	Male	Pulo Riabu, Anamba Islands.	Aug. 18, 1899	Dr. W. L. Abbott.	196.9	85	79	15	20.3	13.8
170916	do	do	do	do	222.3	86.5	78	14.8	21	14
171000	do	Pulo Mobur, Anamba Islands.	Aug. 25, 1899	do	203.2	86	80	14.5	21	13.5
170938	do	Pulo Siantan, Anamba Islands.	Aug. 20, 1899	do	196.9	88	78	15.5	20.5	14
170940	do	do	Aug. 21, 1899	do	.....	89	77	15.3	21	14
170941	do	do[2]	Aug. 24, 1899	do	203.2	90.5	80	15.5	20	14
170943	do	do	Sept. 10, 1899	do	.....	89.5	81	16	20.8	14.2
Average of 7 males					204.5	87.8	79	15.2	20.7	13.9
170939	Female	Pulo Siantan, Anamba Islands.	Aug. 21, 1899	Dr. W. L. Abbott.	200	83.5	75	15	20.5	13.8

[1] Measured in the flesh by the collector. [2] Type.

PYCNONOTUS SIMPLEX HALIZONUS, new subspecies.

Subspecific characters.—Like *Pycnonotus simplex olivaceus*, from the Malay Peninsula, but decidedly larger; lower parts lighter, brighter, and less tinged with brownish (more grayish).

Description.—Type, adult female, No. 171080, U.S.N.M.; Pulo Jimaja, Anamba Islands, September 22, 1899; Dr. W. L. Abbott. Upper surface dark olive brown, with a slight tinge of greenish, the upper tail-coverts sepia; wings and tail between clove brown and sepia, the wing-quills and their upper coverts edged externally with sepia; sides of head, together with neck and breast, olive brown, the shafts of auriculars a little paler; lower surface pale yellowish white, the sides and flanks light olive brown, the breast and jugulum heavily washed with the same color; lining of wing yellowish white; thighs light olive brown tinged with yellow; "iris white; bill horn brown, pale beneath at base; feet fleshy brown."

This new race differs from *Pycnonotus simplex simplex* from Sumatra, in larger size, darker lower parts, and paler, more greenish upper surface. The following five specimens were obtained by Doctor Abbott:

Adult male, No. 170944, U.S.N.M.; Pulo Siantan, September 9, 1899.

Adult male, No. 171078, U.S.N.M.; Pulo Jimaja, September 20, 1899. "Iris gray; feet fleshy brown."

Adult female, No. 171077, U.S.N.M.; Pulo Jimaja, September 19, 1899. "Iris white; feet fleshy brown."

Adult female, No. 171076, U.S.N.M.; Pulo Jimaja, September 19, 1899. "Iris white; bill horn brown, paler at base beneath; feet fleshy brown."

Adult female (type), No. 171080, U.S.N.M.; Pulo Jimaja, September 22, 1899.

The iris, it will be noticed, is white or gray. All five specimens show more or less evidences of the nearly completed molt, but on those collected on September 19 and 22 only slight traces remain.

Measurements of the series of *Pycnonotus simplex halizonus* are given below:

Measurements of specimens of Pycnonotus simplex halizonus.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe without claw.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*	*mm.*
170944	Male	Pulo Siantan, Anamba Islands.	Sept. 9, 1899	Dr. W. L. Abbott.	.....	.....	73	13	18	11.5
171078	do	Pulo Jimaja, Anamba Islands.	Sept. 20, 1899	do	190.5	84	76	13.2	18.5	13.
Average of two males					190.5	84	74.5	13.1	18.3	12.5
171076	Female	Pulo Jimaja, Anamba Islands.	Sept. 19, 1899	Dr. W. L. Abbott.	187.3	84	76.5	12.1	18.5	11
171077	do	do	do	do	187.3	84	76.5	12.2	18.2	11.8
171080	do	do.[2]	Sept. 22, 1899	do	181	82.5	76	12.8	18	11.5
Average of three females					185.2	83.5	76.3	12.4	18.2	11.4

[1] Measured in the flesh by the collector. [2] Type.

There are evidently two distinct species at present confused under the name *Pycnonotus simplex*. One of these is a large bird, in color much resembling *Pycnonotus plumosus*, with rather yellowish brown upper parts; distinctly scaly crown feathers; brownish and buffy lower surface, particularly the crissum; and red or orange iris; to which the name *Pycnonotus brunneus* of Blyth,[3] despite the briefness of the accompanying description, undoubtedly applies. The other species, which occupies nearly the same geographic range, is of smaller size; has no scaly appearance on the feathers of the crown; has a darker, more greenish olive brown upper surface; lower parts with the dark areas grayish, rather than buffy, brown; the light areas, especially the crissum and throat, whitish, with yellowish instead of brownish and buffy suffusion; iris white or grayish; and in general coloration is almost identical with *Iole olivacea*. This bird is *Pycnonotus simplex* Lesson.[4] Dr. C. W. Richmond has recently identified[5] *Picnonotus simplex* Lesson with the large, brownish and buffy, red-eyed species; and following him the present writer described the Sumatra race of the white-eyed bird as *Pycnonotus olivaceus chloeodis*.[6] After much further study of these birds I am now convinced, how-

[3] Journ. Asiatic Soc. Bengal, vol. 14, pt. 2, No. 164, December, 1845, p. 568 (Malacca, Malay Peninsula).
[4] Rev. Zool., vol. 2, June, 1839, p. 167 (Sumatra).
[5] Proc. U. S. Nat. Mus., vol. 26, Feb. 4, 1903, pp. 506–507.
[6] Smiths. Misc. Coll., vol. 60, No. 7, Oct. 26, 1912, p. 11.

ever, that *Pycnonotus simplex* of Lesson is the white-eyed species, and that consequently my *Pycnonotus olivaceus chloeodis* is a synonym. Lesson's original description[1] reads as follows: "Corpore suprà griseo-luteolâ, albo luteo tincto infrà; rostro corneo; pedibus bruneis." The really distinctive portion of this diagnosis is the expression "albo luteo tincto infrà," which could not apply to the red-eyed bird, but is very well descriptive of the white-eyed species, as is at once evident on comparison of both with this description. The expression "corpore supra griseo-luteolâ" also agrees better with the white-eyed than with the red-eyed species, for the latter is decidedly brown above.

Of *Pycnonotus simplex* at least three subspecies are recognizable. The synonymy and geographic ranges of these are as follows:

1. *Pycnonotus simplex simplex* Lesson.

Picnonotus simplex Lesson, Rev. Zool., vol. 2, June, 1839, p. 167 (Sumatra).
Pycnonotus olivaceus chloeodis Oberholser, Smiths. Misc. Coll., vol. 60, No. 7, October 26, 1912, p. 11 (Tapanuli Bay, northwestern Sumatra).

Geographic distribution.—Sumatra, Borneo, and some of the adjacent islands.

2. *Pycnonotus simplex olivaceus* (Moore).

Microtarsus olivaceus Moore, in Horsfield and Moore, Cat. Birds Mus. East Ind. Co., vol. 1, 1854, p. 249 (Malacca).

Geographic distribution.—Malay Peninsula.

3. *Pycnonotus simplex halizonus* Oberholser.

Pycnonotus olivaceus halizonus Oberholser, Bull. U. S. Nat. Mus., No. 98, 1917, p. 43 (Pulo Jimaja, Anamba Islands).

Geographic distribution.—Anamba Islands.

PYCNONOTUS BRUNNEUS ZAPOLIUS, new subspecies.

Subspecific characters.—Similar to *Pycnonotus brunneus brunneus*, from the Malay Peninsula, but larger; upper surface darker; lower parts lighter, more grayish, the dark areas less brownish, the light areas more clearly yellowish, less ochraceous.

Description.—Type, adult male, No. 170942, U.S.N.M.; Pulo Siantan, September 5, 1899; Dr. W. L. Abbott. Pileum between olive brown and deep olive, the darker brown edgings of the feathers imparting a more or less scaly appearance when viewed in the proper light; cervix, back, and scapulars deep olive with a slight olive brown tinge, the (largely concealed) centers of the feathers clove brown; rump and shorter upper tail-coverts dark buffy brown; longest upper tail-coverts olive brown; wings and tail somewhat olivaceous clove brown, but the lesser wing-coverts of the same color as the back, though slightly paler, the remaining superior wing-coverts and the

[1] Rev. Zool., vol. 2, June, 1839, p. 167.

wing-quills edged, and the coverts and tertials also tipped, with the deep olive of the back; sides of head and neck like the pileum but with less squamate appearance; chin and upper throat soiled cream color with a slight olive buff tinge; median portion of abdomen and breast marguerite yellow; thighs, flanks, sides of breast and of body, buffy olive, somewhat paler posteriorly and shading into the pale yellow of the middle of abdomen; jugulum and breast paler buffy olive, mixed with light yellowish; crissum dull cream buff, the centers of the feathers light buffy olive; lining of wing cream buff, the outer edge chamois; "iris red; bill dull black, horn brown at base beneath; feet fleshy brown."

Measurements of type.—Total length (in flesh), 190.5 mm.; wing, 90; tail, 75; exposed culmen, 14; tarsus, 19; middle toe without claw, 13.5.

Although this new race of *Pycnonotus brunneus* is here described from a single specimen, it must be regarded without doubt as distinct. The type has been carefully compared with all of our large series of this species, from various parts of its range, and can not be matched by any other example. This is, so far as the upper parts are concerned, one of the darkest and most greenish of the races of *Pycnonotus brunneus;* while below it is more grayish and more clearly yellow than any of the others. Thus it superficially very much resembles some of the forms of *Pycnonotus simplex*, but it is readily distinguished from all of these by its dark buffy crissum, red eyes, squamate pileum, and other characters.

The type is in fresh plumage, but still shows evidences of molt among the contour feathers, rectrices, and remiges. Its proper wing length may therefore be even somewhat longer than above given.

Doctor Abbott reports this species as common on Pulo Siantan at the time of his visit, but this may refer in part at least to *Pycnonotus simpex halizonus*, since at that time no one separated these two species.

The following races of *Pycnonotus brunneus* are now recognizable:

1. *Pycnonotus brunneus brunneus* Blyth.

[*Pycnonotus*] *brunneus* Blyth, Journ. Asiatic Soc. Bengal, vol. 14, pt. 2, No. 164, December, 1845, p. 568 (in text) (Malacca, Malay Peninsula).

Brachypus modestus Blyth, Journ. Asiatic Soc. Bengal, vol. 14, pt. 2, No. 164, December, 1845, p. 568, footnote (new name for *Pycnonotus brunneus* Blyth) (A. Hay MS.).

Geographic distribution.—Malay Peninsula, Sumatra, Borneo, and neighboring islands.

2. *Pycnonotus brunneus zapolius* Oberholser.

Pycnonotus brunneus zapolius Oberholser, Bull. U. S. Nat. Mus., No. 98, 1917, p. 45.

Geographic distribution.—Anamba Islands.

3. *Pycnonotus brunneus prillwitzi* Hartert.

Pycnonotus prillwitzi HARTERT, Novit. Zool., vol. 9, December 16, 1902, p. 561 (Karangbolong, southern Java).

Geographic distribution.—Java.

Family TIMALIIDAE.

HORIZILLAS MAGNIROSTRIS (Moore).

Alcippe magnirostris MOORE, Proc. Zool. Soc. Lond., 1854 (May 8, 1855), p. 277 (Malacca, Malay Peninsula).

Nine specimens are in the collection, as follows:

Male, No. 171024, U.S.N.M.; Pulo Mata, August 29, 1899. Length, 178 mm. "Bill dark horn brown above, horny yellow beneath."

Female, No. 170946, U.S.N.M.; Pulo Siantan, September 6, 1899. Length, 165 mm. "Iris pink; feet pale leaden; upper mandible dark horn brown; lower mandible leaden. Shot in heavy forest."[1]

Male, No. 170945, U.S.N.M.; Pulo Siantan, September 6, 1899. Length, 178 mm. "Feet pale leaden blue; upper mandible horn brown; lower mandible leaden."

Male, No. 171083, U.S.N.M.; Pulo Jimaja, September 21, 1899. Length, 184.5 mm. "Iris red; feet slaty blue, soles yellow.

Male, No. 171087, U.S.N.M.; Pulo Jimaja, September 22, 1899. Length, 171.5 mm. "Feet fleshy white; iris gray brown; upper mandible horn brown; lower mandible yellow."

Sex unknown, No. 171088, U.S.N.M.; Pulo Jimaja, September 22, 1899. Length, 181 mm. "Iris red; feet lavender blue; upper mandible dark horn brown; lower mandible leaden."

Male, No. 171084, U.S.N.M.; Pulo Jimaja, September 24, 1899. Length, 178 mm.

Male, No. 171086, U.S.N.M.; Pulo Jimaja, September 24, 1899. Length, 178 mm.

Male, No. 171085, U.S.N.M.; Pulo Jimaja, September 26, 1899. Length, 178 mm. "Iris red; feet slaty blue; tarsi brownish; upper mandible dark horn brown; lower mandible leaden."

All these birds are more or less in process of molt. The streaking on the jugulum is almost obsolete in some, strongly marked in others. The color of the back and scapulars varies from a grayish olive brown to a decidedly rufescent olive brown. There is apparently no difference of consequence in either size or color between this series from the Anamba Islands and a larger series from the Malay Peninsula.

Doctor Abbott found this bird common on Pulo Jimaja from September 17 to 28, 1899.

[1] For the character of this forest, see pl. 2, upper figure.

This species is clearly out of place in the genus *Turdinus*, to which Doctor Sharpe has referred it,[1] but is strictly congeneric with *Horizillas magna*, the type of *Horizillas*. The present generic name for this group is *Horizillas* Oberholser,[2] the employment of which in place of *Malacopteron* Eyton [3] we have elsewhere explained.[4]

ANUROPSIS MALACCENSIS MALACCENSIS (Hartlaub).

Brachypteryx malaccensis HARTLAUB, Rev. Zool., 1844, p. 402 (Malacca, Malay Peninsula).

Three specimens are in the collection, as follows:

Adult male, No. 171081, U.S.N.M.; Pulo Jimaja, September 21, 1899. "Iris dark red; feet pale brownish fleshy."

Adult male, No. 170948, U.S.N.M.; Pulo Siantan, September 10, 1899.

Adult female, No. 170947, U.S.N.M.; Pulo Siantan, August 24, 1899.

They average a very little darker on upper parts, sides, and flanks than typical examples of the species from the Malay Peninsula; but in the absence of any other characters, these differences appear too slight and inconstant to be of subspecific importance. All these examples show traces of a nearly completed molt; but the bird taken on September 10 (No. 170948, U.S.N.M.) has many more undeveloped feathers than the others, particularly on pileum, throat, breast, and tail.

Measurements are given below.

Measurements of specimens of Anuropsis malaccensis malaccensis.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[5]	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*
170948....	Male....	Pulo Siantan, Anamba Islands.	Sept. 10, 1899	Dr. W. L. Abbott.	136.5	68	30	16	28.5
171081....	Male....	Pulo Jimaja, Anamba Islands.	Sept. 21, 1899	.....do.....	.....	67.5	35	16.5	29
170947....	Female..	Pulo Siantan, Anamba Islands.	Aug. 24, 1899	.....do.....	139.7	63.5	33	15	28

[1] Cat. Birds Brit. Mus., vol. 7, 1883, p. 547.
[2] *Horizillas* Oberholser, Smiths. Misc. Coll., Quart. Issue, vol. 48, May 13, 1905, p. 65.
[3] *Malacopteron* Eyton, Proc. Zool. Soc. Lond., 1839, p. 102 (type, *Malacopteron magnum* Eyton)
[4] Smiths. Misc. Coll., Quart. Issue, vol. 48, May 13, 1905, pp. 64-65.
[5] Measured in the flesh by the collector.

MIXORNIS PILEATA ZOPHERA, new subspecies.

Subspecific characters.—Similar to *Mixornis pileata pileata* Blyth,[1] from the Malay Peninsula, but averaging larger; upper surface darker, more rufescent, the chestnut of pileum more extended posteriorly; lower parts paler; streaks on throat and jugulum much heavier.

Description.—Type, adult male, No. 171062, U.S.N.M.; Pulo Telaga, Anamba Islands; September 14, 1899; Dr. W. L. Abbott. Pileum reddish chestnut (between chestnut and burnt sienna), the forehead mixed with grayish; superciliary stripe and sides of head and neck olive buff, with obscure streaks of dusky, the auriculars shading posteriorly into light reddish chestnut; rest of upper parts raw umber; middle tail-feathers and outer vanes of others, except two outermost pairs, chestnut, the tips and obsolescent bars which extend faintly over all the feathers almost to their bases, sepia, the rest of tail dark rufescent hair brown with numerous almost obsolete darker bars, the inner webs narrowly margined with pale brownish on their basal portions; primaries and secondaries dark hair brown, basally margined on inner webs with cream white, on outer webs with chestnut, except outermost primaries, which are edged with pale brownish; tertials chestnut; superior wing-coverts burnt sienna; edge of wing sulphur yellow; throat, jugulum, breast, and middle of abdomen sulphur yellow, the throat and jugulum heavily streaked with black; sides, flanks, and crissum, olive buff; lining of wing pale sulphur yellow; "iris reddish brown; bill dark horn brown, dark leaden beneath; feet pale brownish green."

This new form, in its pale, heavily streaked lower parts and large size, resembles *Mixornis pileata everetti* of the Natuna Islands, but differs from that bird in its lighter, much less rufescent (more grayish) upper surface (the back thus more contrasted with pileum), and in the somewhat heavier streaking of the anterior lower parts.

Eleven specimens were obtained, as follows:

Adult male, No. 170915, U.S.N.M.; Pulo Riabu, August 18, 1899.

Adult male, No. 170949, U.S.N.M.; Pulo Siantan, September 6, 1899. "Iris gray brown; feet brownish olive; upper mandible horn brown; lower mandible leaden; naked orbital skin blue."

Adult male, No. 170950, U.S.N.M.; Pulo Siantan, September 11, 1899. "Iris dark brown; lores blue."

Adult male (type), No. 171062, U.S.N.M.; Pulo Telaga, September 14, 1899.

Adult male, No. 171065, U.S.N.M.; Pulo Telaga, September 15, 1899. "Iris ochrous brown."

[1] The name in common use for this species is *Mixornis gularis*, which is the *Motacilla gularis* of Raffles (Trans. Linn. Soc. Lond., vol. 13, 1822, p. 312); but this is preoccupied by *Motacilla gularis* Gmelin (Syst, Nat., vol. 1, pt. 2, 1789, p. 997), and therefore untenable. The proper name seems to be *Prinia pileata* Blyth (Journ. Asiat. Soc. Bengal, vol. 11, 1842, p. 204). This species should consequently stand as *Mixornis pileata* (Blyth). (See Oberholser, Smiths. Misc. Coll., vol. 60, No. 7, Oct. 26, 1912, p. 9).

Adult male, No. 171082, U.S.N.M.; Pulo Jimaja, September 21, 1899. "Iris dark brown; feet brownish green."

Adult female, No. 170914, U.S.N.M.; Pulo Riabu, August 17, 1899.

Adult female, No. 174796, U.S.N.M.; Pulo Riabu, August 23, 1900. "Iris pale yellowish gray; naked skin about eye dull blue."

Adult female, No. 171064, U.S.N.M.; Pulo Telaga, September 14, 1899. "Iris ochrous brown; upper mandible dark leaden; lower mandible leaden; feet pale brownish green."

Adult female, No. 171063, U.S.N.M.; Pulo Telaga, September 14, 1899. "Iris dark brown."

Adult female, No. 171066, U.S.N.M.; Pulo Telaga, September 15, 1899.

The above series is very uniform in color, notwithstanding considerable individual difference in the width of the streaks on the throat, and the degree of rufescence on the back. The female is in size identical with the male, but is noticeably less rufescent on the upper surface, excepting, of course, the pileum. All these specimens excepting the type, taken from August 15 to September 15, show evidences of molt in progress. Doctor Abbott writes that this was a common species on Pulo Riabu, August 18, 1899; on Pulo Jimaja, September 17–28, 1899; common in thickets on Pulo Siantan, August 19 to September 6, 1899; and that it was the commonest bird of any kind on Pulo Telaga, September 14–15, 1899.

Measurements of the entire series are given below.

Measurements of specimens of Mixornis pileata zophera.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*
170950	Male	Pulo Siantan, Anamba Islands.	Sept. 11, 1899	Dr. W. L. Abbott.	.....	60	53	13.5	18
170949	do	do	Sept. 6, 1899	do	146.1	61	51	14.5	20
171065	do	Pulo Telaga, Anamba Islands.	Sept. 15, 1899	do	136.6	61.5	53.5	13.5	18
171062	do	do.[2]	Sept. 14, 1899	do	152.4	62.5	55	13	19.5
170915	do	Pulo Riabu, Anamba Islands.	Aug. 18, 1899	do	146.1	63.5	59	15	20.5
171082	do	Pulo Jimaja, Anamba Islands.	Sept. 21, 1899	do	.....	62	55	14	20
Average of 6 males					145.3	61.8	54.4	13.9	19.3
171063	Female	Pulo Telaga, Anamba Islands.	Sept. 14, 1899	Dr. W. L. Abbott.	146.1	62	56	13.5	19
171064	do	do	do	do	136.6	58.5	51.5	13	17.5
171066	do	do	Sept. 15, 1899	do	.....	60.5	49[3]	12.5	19.5
170914	do	Pulo Riabu, Anamba Islands	Aug. 17, 1899	do	146.1	65	61	14	20
174796	do	do	Aug. 23, 1899	do	149.4	61.5	56	14.5	20
Average of 5 females					144.6	61.5	54.7	13.5	19.2

[1] Measured in the flesh by the collector. [2] Type. [3] Tail molting.

Family TURDIDAE.

KITTACINCLA MALABARICA OCHROPTILA, new subspecies.

Subspecific characters.—Similar to *Kittacincla malabarica*[1] from the Malay Peninsula, but larger; male with the deep tawny color of posterior lower parts much lighter; metallic sheen of upper parts less purplish; female with slate color of upper surface and breast lighter, and rufous of posterior lower parts more uniform.

Description.—Type, adult male, No. 170954, U.S.N.M.; Pulo Siantan, Anamba Islands, September 8, 1899; Dr. W. L. Abbott. Whole head, neck, jugulum, back, scapulars, lesser and median wing-coverts, glossy blue black; rump and upper tail-coverts pure white; wing-quills, primary and greater coverts, clove brown, with a bluish black sheen on exposed upper surface; tail brownish black with a slight bluish sheen, the outer four pairs of feathers with broad white tips; whole of posterior lower surface and lining of wing deep tawny, the latter somewhat mixed with white.

Geographic distribution.—The Anamba Islands, except the southern islands of Pulo Riabu and Pulo Piling.

The male of this new race differs from that of *Kittacincla malabarica suavis*, of Borneo, most conspicuously in having broad dark brown bases to the outer tail-feathers; the throat, breast, and upper surface are not so deeply black, but somewhat more glossy. The female is very different from the male, and is likewise in striking contrast to the female of *Kittacincla malabarica suavis*, for the entire upper surface is slate color, not black; the wings and tail are lighter, and more brownish or slaty; upper wing-coverts with some tawny edgings; throat and breast slate color instead of black; rufous of posterior lower parts lighter; outer tail-feathers with brown bases.

Of this new form Doctor Abbott obtained seven specimens, as follows:

Adult male (type), No. 170954, U.S.N.M.; Pulo Siantan, September 8, 1899.

Adult male, No. 170956, U.S.N.M.; Pulo Siantan, September 10, 1899.

Adult male, No. 171043, U.S.N.M.; Pulo Manguan, September 1, 1899.

Adult male, No. 171075, U.S.N.M.; Pulo Jimaja, September 23, 1899.

Immature male, No. 171042, U.S.N.M.; Pulo Manguan, September 1, 1899.

Adult female, No. 170955, U.S.N.M.; Pulo Siantan, September 8, 1899.

[1] For the use of the specific name *malabarica* Scopoli in place of *macroura* Gmelin, see Richmond, Proc. U. S. Nat. Mus., vol. 26, 1903, p. 512.

Immature female, No. 171041, U.S.N.M.; Pulo Manguan, August 31, 1899. Length, 203 mm.

All the adult birds are in process of molt, involving chiefly the wing and tail feathers, though the type (No. 170954, U.S.N.M.) has the feathers of most of the chin and forepart of the head in their sheaths, and all the other specimens have some molting feathers on the body.

The adult female differs from the adult male in her shorter tail; smaller general size; dull, nonmetallic, bluish slate-colored upper parts, throat, and breast, the pileum with a brownish tinge; duller, more brownish wings and tail; tawny edgings on some of the upper wing-coverts; and lighter shade of the posterior lower parts, the thighs and middle of abdomen particularly paler.

The immature male (No. 171042, U.S.N.M.) obtained by Doctor Abbott is in process of molt, and is changing from the juvenal into the completely adult plumage. It differs from the adult male in partly brown head and back, the black feathers of the adult plumage having only partly replaced those of the juvenal dress; short, more brownish tail; much more brownish wings, the remiges edged partly on exterior webs with tawny, the greater and median wing-coverts broadly tipped with the same (the lesser coverts have assumed the black of adult plumage); sides of head and of neck dull dark brown, mixed with tawny ochraceous, also with a few black feathers, leaving only the center of chin, throat, and jugulum glossy black; posterior lower parts of a paler rufous.

The immature female (No. 171041, U.S.N.M.) is in what appears to be juvenal plumage, and differs from the adult female in having the upper surface lighter, decidedly more brownish, the pileum, back, and scapulars being particularly brown; the rump with an anterior band of tawny, and all the white washed with tawny; tail more brownish, all the white tips, excepting those of the two outer pairs, much mottled with brown; wings more brownish; remiges broadly edged on outer webs with dull tawny; median wing-coverts more conspicuously tipped with tawny ochraceous; lesser wing-coverts with a broad white streak along the shaft or on the outer web of each feather; forehead, lores, superciliary stripe, orbital region, and cheeks, dull white, finely mixed with brownish gray; sides of neck slate gray; auriculars slate gray, streaked with whitish; chin buffy white; a buffy ochraceous spot on upper throat just back of the chin; rest of throat rather light gray, washed and streaked broadly with buff; posterior lower parts much paler than in the adult. This example shows only slight indications of molt.

Doctor Abbott reported this species as common on Pulo Siantan from August 19 to September 6, 1899; and observed it also on Pulo Kelong, September 1, 1899.

The following measurements of the adults of this race are all that could be taken with any reasonable accuracy, owing to the molting condition of the wings and tail, and it is possible that the wing and tail dimensions here given are, for the same reason, somewhat less than they should be.

Measurements of specimens of Kittacincla malabarica ochroptila.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*
170954	Male	Pulo Siantan, Anamba Islands.[2]	Sept. 8, 1899	Dr. W. L. Abbott.	298.5	99	173	18	27.5
170956	do	do	Sept. 10, 1899	do	215.9	.....	.....	16.8	27
171075	do	Pulo Jimaja, Anamba Islands.	Sept. 23, 1899	do	228.6	97	.....	15	26
171043	do	Pulo Manguan, Anamba Islands.	Sept. 1, 1899	do	.....	98	.....	15.5	25.8
Average of four males					.....	98.0	173	16.3	26.6
170955	Female	Pulo Siantan, Anamba Islands.	Sept. 8, 1899	Dr. W. L. Abbott.	215.9	88	108	16	24

[1] Measured in the flesh by the collector. [2] Type.

KITTACINCLA MALABARICA HETEROGYNA, new subspecies.

Subspecific characters.—Similar to *Kittacincla malabarica ochroptila*,[3] but female very much darker, particularly on the throat, breast, and upper surface.

Description.—Type, adult female, No. 170918, U.S.N.M.; Pulo Riabu, Anamba Islands, August 18, 1899; Dr. W. L. Abbott. Head, neck, jugulum, back, scapulars, lesser and median wing-coverts, slate black; rump and upper tail-coverts pure white; greater wing-coverts, primary coverts, and wing-quills, dark brown, between sepia and clove brown, these coverts somewhat darker, the greater series narrowly margined externally with tawny; tail clove brown, the three outermost pairs of rectrices with broad white tips on both webs, the fourth pair with a broad white tip confined to outer web; posterior lower surface tawny, the thighs and middle of abdomen somewhat whitish; lining of wing tawny, a little mixed with whitish and dusky. "Iris dark brown; feet fleshy white."

Measurements (of type).—Wing, 92 mm.; tail, 97.5; exposed culmen, 15.5; tarsus, 24.5.

Geographic distribution.—Pulo Riabu and Pulo Piling, in the southern Anamba Islands.

Unfortunately, we have no adult male of this new race, but the female is easily separable, not only from *Kittacincla malabarica*

[3] See, p. 5.

ochroptila, but from the other races of the species. It differs from *Kittacincla malabarica malabarica* (specimens from the Malay Peninsula) in its darker and more blackish throat and upper surface. It is even more different from *Kittacincla malabarica suavis*, for it has broad, brown bases to the outer rectrices, lighter, less metallic black (more slaty) upper parts and throat, and lighter posterior lower parts.

It is particularly interesting as being the only known instance of a second resident form of the same species on the Anamba Islands. It is apparently confined to Pulo Riabu, where Doctor Abbott says that it is fairly common; and to Pulo Peling, where he observed it, August 17, 1899.

Two specimens are in the collection—the type above described and an immature male, No. 170919, U.S.N.M., also from Pulo Riabu, taken, August 18, 1899. This bird is just beginning to molt from the juvenal into the adult plumage. The head, hind neck, and part of the back are still dull clove brown; the wings lighter brown of a more sepia tone, the quills rusty edged, and some of the coverts with tawny spots; the tail is short like that of the female, and dull colored; the sides of the head are dull brownish slate black, with small ochraceous streaks; chin and throat dull brownish slate color with rather large spots of ochraceous; posterior lower parts deep tawny rufous, the middle of breast slightly mottled with blackish, and the middle of abdomen white.

Family SYLVIIDAE.

ORTHOTOMUS ATROGULARIS (Temminck).[1]

Orthotomus atrogularis TEMMINCK, Nouv. Rec. Planch. Color. d'Oiseaux, vol. 3, livr. 101, 1836, text to livr. 101 (Malacca and Borneo).

Seven specimens are in the collection, as follows:

Adult male, No. 171002, U.S.N.M.; Pulo Mobur, August 25, 1899. Length, 118 mm. "Iris pale yellow brown."

Juvenal male, No. 171025, U.S.N.M.; Pulo Mata, August 29, 1899. Length, 108 mm.

Juvenal male, No. 170970, U.S.N.M.; Pulo Siantan, September 5, 1899. Length, 115 mm.

Juvenal male, No. 171001, U.S.N.M.; Pulo Mobur, August 25, 1899. Length, 108 mm. "Bill dark horn brown, pale brownish fleshy beneath; feet dark fleshy brown."

Adult female, No. 170968, U.S.N.M.; Pulo Siantan, August 20, 1899. Length, 115 mm. "Iris pale yellow brown."

Juvenal female, No. 170969, U.S.N.M.; Pulo Siantan, August 21, 1899. Length, 111 mm. "Iris pale yellowish brown; feet pale brownish fleshy."

[1] This is the original spelling of the specific name.

Juvenal female, No. 171089, U.S.N.M.; Pulo Jimaja, September 23, 1899. Length, 111 mm. "Iris yellow brown; feet fleshy brown."

Although the number of adults is too few to admit of a perfectly satisfactory comparison, they seem to be identical with birds from the Malay Peninsula which represent true *Orthotomus atrogularis*. The adult female is like the adult male, except that the black gular patch is much less extensive and broadly streaked with white.

The two youngest juvenal males (Nos. 170970 and 171001, U.S.N.M.) resemble the adult female, but have rather duller, lighter upper parts, particularly the pileum, with a mixture of olive green in the pileum; less black on the jugulum, and a wash of olive yellow across the breast.

The juvenal female is like the juvenal male, but entirely lacks the blackish on the jugulum and the olive yellow wash on the breast; the crown and forehead of one (No. 170969, U.S.N.M.) are entirely olive green like the back, save for one half-grown rufous feather; the forehead and sides of crown of the other (No. 171089, U.S.N.M.) are rufous, but the rest of the pileum is olive green.

The adult male (No. 171002, U.S.N.M.), taken, August 25, 1899, is in heavy molt of contour feathers and is also molting some of the wing-quills; and the adult female (No. 170968, U.S.N.M.), taken, August 20, 1899, is in the same condition. One of the juvenal males (No. 171025, U.S.N.M.), taken, August 29, 1899, is passing from the juvenal plumage into that of the first autumn, and has acquired the rectrices, nearly all the remiges, and approximately three-fourths of the contour feathers. The two other juvenal males (No. 171001, U.S.N.M., August 25, 1899; and No. 170970, U.S.N.M., September 5, 1899) are just beginning to change from juvenal into the first autumn livery; and one of the juvenal females (No. 170969, U.S.N.M.), taken, August 21, 1899, is in the same condition. The remaining juvenal female (No. 171089, U.S.N.M.), taken, September 23, 1899, has apparently rather more than half completed the change to first autumn plumage.

Doctor Abbott found this tailor-bird common on Pulo Siantan from August 19 to September 6, 1899.

Family GRACULIDAE.

GRACULA JAVANA PRASIOCARA, new subspecies.

Subspecific characters.—Similar to *Gracula javana javana*, from Java, but larger; sides of crown more greenish.

Description.—Type, adult male, No. 170905, U.S.N.M.; Pulo Piling, Anamba Islands, August 17, 1899; Dr. W. L. Abbott. Entire plumage black, excepting a large white spot on the middle of the six

outer primaries; middle of crown, the back, jugulum, and lower part of thighs, with metallic violet or bronzy violet sheen; throat and chin with a dull greenish blue sheen; sides of crown, sides of occiput, all of lower back, rump, upper tail-coverts, breast, abdomen, and crissum, with metallic bottle green sheen; margins of all the superior wing-coverts, except the greater series, with glossy bluish, greenish or violet sheen; wing-quills and rectrices with slight bluish or greenish reflections, excepting the inner webs of the former, which are brownish, decidedly paler along the basal portion of the inner margin.

This new race is most nearly allied to *Gracula javana javana*, with which it agrees in size of lappets and in having the supra-auricular bare space completely divided by a line of feathers. So far as known it is confined to the Anamba Islands. Birds of this species from Borneo and Sumatra seem to agree with those from Java.

Doctor Abbott obtained seven specimens, four of which (Nos. 171039, 174721, 170995, and 170905, U.S.N.M.) show slight evidences of molt. He found the species common on Pulo Piling, August 17, 1899; and about Telok Ayer Bini on Pulo Siantan, September 5–6, 1899. The measurements of all the specimens collected are as follows:

Measurements of Gracula javana prasiocara.

U. S. N. M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Height of bill at base.	Tarsus.	Middle toe without claw.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*	*mm.*	*mm.*
170905	Male....	Pulo Piling, Anamba Islands.[2]	Aug. 17,1899	Dr. W. L. Abbott.	349.3	193	91	27.5	16	41.5	33
170995	Male....	Pulo Mobur, Anamba Islands.	Aug. 25,1899	...do.....	336.6	178.5	85	28	15.5	41.5	33.5
171039	Male....	Pulo Manguan, Anamba Islands.	Aug. 31,1899	...do.....	330.2	185	87	28	16	39.5	34
170912	[Male]...	Pulo Riabu, Anamba Islands.	Aug. 18,1899	...do.....	323.9	193	93.5	25.5	15.5	40	33.5
Average of 4 males.....					335	187.4	89.1	27.3	15.8	40.6	33.5
174721	Female..	Pulo Riabu, Anamba Islands.	Aug. 23,1900	Dr. W. L. Abbott.	336.6	182	88	25	15	40	33.5
170904	Female.	Pulo Piling, Anamba Islands.	Aug. 17,1899	...do.....	323.9	180	82	27.5	15.5	40	32.5
171040	Female.	Pulo Manguan, Anamba Islands.	Aug. 31,1899	...do.....	.....	178.5	85.5	28	15	39.5	33
Average of 3 females.....					330.3	180.2	85.2	26.8	15.2	39.8	33

[1] Measured in the flesh by the collector. [2] Type.

The present species was first described in 1757 as *Corvus javanensis* by Osbeck,[3] in a pre-Linnaean book, which in 1771 was translated into English. This name has been in common use, dated from 1771, but according to present rules of nomenclature it is untenable, since the book in which it appeared was a mere translation of an

[3] Dogb. Ostind. Resa, 1757, p. 102.

ineligible pre-Linnaean work. This being the case, the species must take the name *Gracula javana*, because *Eulabes javanus* Cuvier[1] is the next available specific designation. This change Doctor Hartert has already explained.[2]

LAMPROCORAX PANAYENSIS HETEROCHLORUS, new subspecies.

Subspecific characters.—Similar to *Lamprocorax panayensis strigatus*, from Java, but very much larger, and plumage of male throughout more bronzy or oily green.

Description.—Type, adult male, No. 170996, U.S.N.M.; Pulo Mobur, Anamba Islands, August 26, 1899; Dr. W. L. Abbott. Entire plumage, excepting the remiges and rectrices, metallic bottle green, with a slight bronzy tinge, the chin and throat with a somewhat purplish sheen; remiges and rectrices blackish on upper surface, with steel greenish, bluish, and purplish reflections; lower surface of tail and wings blackish clove brown, the under wing-coverts and axillars margined with metallic green.

This new race is very distinct and separable at a glance from *Lamprocorax panayensis strigatus* of Java by the characters above given. It is, however, more closely allied to *Lamprocorax panayensis panayensis*, from which, in the male, as comparison with a large series of Philippine specimens shows, it differs in its more grassy, less oily or bronzy green upper parts, and particularly in its decidedly less bronzy lower surface, which is also much brighter green, particularly on the posterior portions, where *Lamprocorax panayensis panayensis* is nearly always distinctly grayish.

Four specimens are in the collection, as follows:

Adult male (type), No. 170996, U.S.N.M.; Pulo Mobur, August 26, 1899. Length, 229 mm.

Adult male, No. 170997, U.S.N.M.; islet near Pulo Mobur, August 26, 1899. Length, 216 mm.

Immature male, No. 170933, U.S.N.M.; Pulo Siantan, August, 1899.

Immature male, No. 170998, U.S.N.M.; islet near Pulo Mobur, August 26, 1899. Length, 203 mm.

The type (No. 170996) is in perfect plumage; and the other adult male (No. 170997) is nearly so, though molting the under wing-coverts, with some of the wing-quills and body feathers. One of the immature birds (No. 170998) is in the juvenal plumage, which closely resembles that of the adult female, but is molting many of the body feathers. The other immature is similar but is more extensively glossy green above, has the breast nearly solid green, and the posterior lower parts much more mixed with glossy green; it is molting wing, tail, and body feathers.

[1] Règne Anim., vol. 1, 1829, p. 377 (Java). [2] Novit. Zool., vol. 9, 1902, pp. 439–440.

Doctor Abbott observed this bird on Pulo Mata, August 24 to September 1, 1899; and on Pulo Telaga, September 14–15, 1899.

The two adults measure as follows:

Measurements of specimens of Lamprocorax panayensis heterochlorus.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	mm.	mm.	mm.	mm.
170996....	Male....	Pulo Mobur, Anamba Islands.[2]	Aug. 26, 1899	Dr. W. L. Abbott..	229	108	76	18	23.5
170997....	...do.....	.....do.....	.....do.....	.....do.....	216	112	72.5	20	23.5

[1] Measured in the flesh by the collector. [2] Type.

The earliest name among the subspecies of *Lamprocorax chalybeus* of authors is of course *Lamprocorax panayensis* (Scopoli),[3] which therefore becomes the name for the species as a whole, and of which *Lamprocorax chalybeus* becomes a subspecies. The proper designation for the last-mentioned form is, however, *Lamprocorax panayensis strigatus* Horsfield,[4] because *Turdus strigatus* Horsfield [4] has anteriority over *Turdus chalybeus* Horsfield [5] of even date.

Some recent authors have united the genus *Lamprocorax* Bonaparte with *Aplonis* Gould, on the ground that the characters usually assigned to these groups are not constant. This is true, for in both form of bill and of tail there are intermediates, which might without violence find a place in either group. There is, however, a structural character which does hold good for the separation of all the forms of both genera examined. In *Lamprocorax* the second (counting from the spurious outermost) primary is decidedly longer than the fifth, while in *Aplonis* it is usually shorter, sometimes equal, but never longer. Furthermore, the recognition of two genera by this criterion leaves all the species, with one exception, in the genera in which they have been. This exception is *Aplonis cantoroides*, and the necessity for its transferral was long ago suggested by Dr. R. B. Sharpe.[6] The following species of these two genera have been examined in this connection:

Lamprocorax metallicus (Temminck) and subspecies.
Lamprocorax panayensis (Scopoli) and subspecies.
Lamprocorax todayensis Mearns.
Lamprocorax minor (Ramsay).
Lamprocorax cantoroides (Gray).

[3] *Muscicapa panayensis* Scopoli, Del. Flor. et Faun. Insubr., pt. 2, 1786, p. 96 (Panay Island, Philippine Islands).

[4] *Turdus strigatus* Horsfield, Trans. Linn. Soc. Lond., ser. 1, vol. 13, pt. 1, May, 1821, p. 148 (Java).

[5] *Turdus chalybeus* Horsfield, Trans. Linn. Soc. Lond., ser. 1, vol. 13, pt. 1, May, 1821, p. 148 (Java).

[6] Cat. Birds Brit. Mus., vol. 13, 1890, p. 125.

Aplonis opaca (Kittlitz) (=*Aplonis kittlitzi* Authors).[1]
Aplonis atrifusca (Peale).
Aplonis vitiensis Layard.
Aplonis brevirostris (Peale).
Aplonis tabuensis (Gmelin) (=*Aplonis cassini* Gray).
Aplonis atronitens Gray.
Aplonis striata (Gmelin).

Family DICRURIDAE.

DISSEMURUS PARADISEUS MICROLOPHUS, new subspecies.

Subspecific characters.—Similar to *Dissemurus paradiseus paradiseus* of Siam, but frontal crest denser, stiffer, and very much shorter.

Description.—Type, adult male, No. 171074, U.S.N.M.; Pulo Jimaja, Anamba Islands, September 21, 1899; Dr. W. L. Abbott. Entire plumage brownish black, all the exposed parts of the body plumage, except on the chin, throat, abdomen, and flanks, glossy metallic greenish or bluish, this on the breast taking the form of apical spots, on the pileum and nape broad V-shaped terminal markings which leave more or less well-defined dull shaft streaks, these most conspicuous on the crown; wings and tail somewhat shiny brownish black, the rectrices and remiges with their outer webs mostly metallic greenish or bluish, the exposed surface of the upper wing-coverts similar; racquets large; crest short.

Eleven specimens are in the collection, from the islands of Siantan, Jimaja, Piling, Mobur, Riabu, and Telaga. All are more or less in process of molt; some have the long racquet feathers fully developed, others but partially, while one (No. 170907, U.S.N.M.) lacks them entirely. Among the adults there is comparatively little individual color variation, though some specimens are rather more bluish, others more greenish on the metallic portions of the plumage. Three (Nos. 170906, 170908, and 170934, U.S.N.M.) are immature, in which condition they differ from the adults in being much duller, the upper parts mixed with brown, the lower parts almost entirely dull brown, with very few metallic bluish or greenish feathers. Doctor Abbott notes that No. 170934 (immature) has the

[1] This species has for long been known as *Aplonis kittlitzi* (Finsch and Hartlaub) (*Calornis kittlitzi* Finsch and Hartlaub, Beitr. Fauna Centralpolyn., 1867, p. 109 [Ualan Island, Caroline Islands.]). It was, however, first recognized and described by Kittlitz (Kupfertafeln Naturgesch. Vögel, Heft 2, 1833, p. 11, pl. 15, fig. 2), who applied to it the names *Turdus columbinus* Gmelin (which is *Lamprocoraz panayensis* Scopoli) and *Lamprotornis opaca*, a manuscript name of Lichtenstein's, here first given nomenclatural status by being published with a description and a figure. The latter name is introduced by Kittlitz in the following fashion: "Fig. 2. *Turdus columbinus* Gm. L. oder *Lamproth. opaca* Lichtenstein, ein häufiger Vogel auf den Marianen und Carolinen, * * *." The species must therefore bear the name *Aplonis opaca* (Kittlitz), since this is long prior to *Aplonis kittlitzi* (Finsch and Hartlaub). Subsequently G. R. Gray called it *Calornis opaca* (Cat. Birds Trop. Is. Pac. Brit. Mus., 1859, p. 26), using Lichtenstein's name *opaca*, and citing the above-mentioned descriptions and figure of Kittlitz, under the name "*Lamprotornis columbina*" Kittlitz.

grayish brown"; No. 170906 (immature), "iris brownish gray, bill and feet black"; and No. 170907 (adult), "iris red, bill and feet black."

Doctor Abbott further says that the species was common on Pulo Telaga, September 14–15, 1899; fairly common on Pulo Piling, August 17, 1899; and one of the commonest birds on Pulo Siantan, September 17–28, 1899. It was noted also on Pulo Kelong, September 1, 1899; and on Pulo Manguan, September 1–2, 1899.

Detailed measurements of all the specimens collected by Doctor Abbott are given in the adjoining table.

Measurements of specimens of Dissemurus paradiseus microlophus.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Tail except racquet feathers.	Length of racquet.	Greatest width of racquet.	Total culmen.	Height of bill at base.	Longest feather of frontal crest.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*	*mm.*	*mm.*	*mm.*	*mm.*	*mm.*
170899	Male	Pulo Mobur, Anamba Islands	Aug. 25, 1899	Dr. W. L. Abbott.	292.1	[2] 156	.....	138	.....	.....	35.5	12	5.5	24
170906	Male [im.]	Pulo Piling, Anamba Islands	Aug. 17, 1899	....do.....	444.5	151	280	142.5	88	14.5	32	12.5	5.1	25
171074	Male	Pulo Jimaja, Anamba Islands[3]	Sept. 21, 1899	....do.....	469.9	164	331	160	86	20	35.8	13	7.5	25.5
170937	....do.....	Pulo Siantan, Anamba Islands	Sept. 9, 1899	....do.....	342.9	157	.....	149.5	92	21.5	33	12.5	12	25.2
170934	Male ([im.]	....do.....	Aug. 20, 1899	....do.....	406.4	155	.....	145	86.5	19	30.2	12	6.5	25.7
170936	Male	....do.....	Aug. 24, 1899	....do.....	457.2	153	302.5	146.5	102	22	32.5	12.2	7.5	26.2
170935	....do.....	....do.....	Aug. 23, 1899	....do.....	.....	[2] 155.5	.....	144	93	18.5	35	13	8.1	24.8
Average of seven males					.....	155.9	304.5	146.5	91.3	19.3	33.4	12.5	7.5	25.2
170908	Female [im.]	Pulo Piling, Anamba Islands	Aug. 17, 1899	Dr. W. L. Abbott.	444.5	147	281	147	87	19.8	32.5	12.7	7.5	25.5
170907	Female	....do.....	....do.....	....do.....	292.1	147	.....	.....	.....	.....	32	12	7.5	24
171058	....do.....	Pulo Telaga, Anamba Islands	Sept. 14, 1899	....do.....	431.8	147	275	139	75	16.5	32.5	12	7	24
170913	....do.....	Pulo Riabu, Anamba Islands	Aug. 18, 1899	....do.....	489	156	321.5	145.5	67	17	32	12.5	8	23.5
Average of four females					.....	149.3	292.5	143.8	76.3	17.8	32.3	12.3	7.5	24.3

[1] Measured in the flesh by the collector.

[2] Molting.

[3] Type.

Family MOTACILLIDAE.

MOTACILLA BOARULA MELANOPE Pallas.

Motacilla melanope PALLAS, Reise Versch. Prov. Russ. Reichs, vol. 3, 1776, p. 696 (Dauria, Siberia).

One apparently immature female, from Pulo Manguan, September 1, 1899. Length, 190.5 mm.

Family NECTARINIIDAE.

ANTHREPTES MALACENSIS ANAMBAE, new subspecies.

Subspecific characters.—Male almost identical with same sex of *Anthreptes malacensis malacensis*,[1] from the Malay Peninsula, but throat lighter; the yellow of median posterior lower surface averaging rather brighter and paler; female similar to that of *Anthreptes malacensis malacensis*, but very much more greenish (less brownish or grayish) above, much more richly yellow beneath; immature male also readily distinguishable from that of *Anthreptes malacensis malacensis* by paler, more yellowish olive green upper parts and somewhat more yellowish lower surface.

Description.—Type, adult male, No. 171009, U.S.N.M.; Pulo Mobur, Anamba Islands, August 25, 1899; Dr. W. L. Abbott. Pileum, cervix, back, and sides of neck, iridescent metallic bottle green, with some purplish reflections; rump and upper tail-coverts metallic royal purple; tail clove brown, most of the feathers with narrow metallic greenish or purplish external margins, the outer feathers rather lighter; wings grayish sepia, the quills and greater coverts edged externally with olivaceous; median coverts and scapulars broadly dull burnt sienna terminally; lesser coverts metallic royal purple; sides of head olive green; chin, throat, and jugulum, cinnamon rufous, bordered on each side by a conspicuous maxillar stripe of royal purple; breast and abdomen lemon yellow; flanks and crissum pale olive yellow; lining of wing white, mixed with pale yellow.

Both adult male and adult female of *Anthreptes malacensis anambae* may be distinguished at a glance from *Anthreptes malacensis chloris-gaster*, of the Philippine Islands, by the much brighter yellow of the lower parts.

Immature males of *Anthreptes malacensis anambae* are very much like the adult female, but are somewhat more yellowish on the upper surface. The immature female is very much like the adult of the same sex, but is rather lighter, more yellowish above, and slightly paler below.

Doctor Abbott obtained, altogether, 15 specimens, as follows:

Adult male, No. 171102, U.S.N.M.; Pulo Jimaja, September 26, 1899.

[1] This is the original spelling of the specific name.

Adult male (type), No. 171009, U.S.N.M.; Pulo Mobur, August 25, 1899.

Adult male, No. 170984, U.S.N.M.; Pulo Siantan, August —, 1899. "Bill black above, horny brown beneath; iris pinkish red; feet olive, soles yellowish."

Adult male, No. 170985, U.S.N.M.; Pulo Siantan, September 8, 1899.

Adult male, No. 171037, U.S.N.M.; Pulo Kelong, August 30, 1899.

Adult male, No. 171051, U.S.N.M.; Pulo Manguan, September 1, 1899.

Adult male, No. 171052, U.S.N.M.; Pulo Manguan, September 1, 1899.

Immature male, No. 171050, U.S.N.M.; Pulo Manguan, August 31, 1899. Length, 117.5 mm.

Immature male, No. 174855, U.S.N.M.; Pulo Rittan, May 21, 1900. Length, 136.5 mm.

Immature male, No. 170982, U.S.N.M.; Pulo Siantan, August 20, 1899. "Feet olive; soles yellow."

Immature male, No. 171027, U.S.N.M.; Pulo Mata, August 28, 1899.

Adult female, No. 170983, U.S.N.M.; Pulo Siantan, August 24, 1899.

Adult female, No. 171099, U.S.N.M.; Pulo Jimaja, September 18, 1899.

Adult female, No. 171100, U.S.N.M.; Pulo Jimaja, September 21, 1899.

Immature female, No. 171101, U.S.N.M.; Pulo Jimaja, September 22, 1899.

All of these specimens, excepting the single immature female (No. 171101, U.S.N.M.) and two of the immature males (Nos. 170982 and 174855, U.S.N.M.), are more or less in progress of molt. The adult female from Pulo Siantan, taken, August 24 (No. 170983, U.S.N.M.), is in badly worn and much faded plumage and had just begun to molt. Some of the adult males have the back, cervix, and pileum almost wholly metallic violet, but this seems to be an individual variation that appears in all the forms of *Anthreptes malacensis*.

Doctor Abbott noted this species common on Pulo Siantan, August 19 to September 6, 1899; on Pulo Jimaja, September 17–28, 1899; and also observed it on Pulo Telaga, September 14–15, 1899.

The measurements of all the adults obtained by Doctor Abbott are given in the subjoined table.

Measurements of specimens of Anthreptes malacensis anambae.

U.S.N.M. No.	Sex.	Locality.	Date	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*
171009	Male	Pulo Mobur, Anamba Islands.[2]	Aug. 25, 1899	Dr. W. L. Abbott	139.7	70.5	47.5	17.5	18.5
171037	do	Pulo Kelong, Anamba Islands.	Aug. 30, 1899	do	.....	70	47	18	17.5
171102	do	Pulo Jimaja, Anamba Islands.	Sept. 26, 1899	do	127	67.5	.....	17.5	16.5
170985	do	Pulo Siantan, Anamba Islands.	Sept. 8, 1899	do	.....	68	.....	.....	18.5
170984	do	do	Aug. —, 1899	do	139.7	68.5	46	17.5	17.5
171051	do	Pulo Manguan, Anamba Islands.	Sept. 1, 1899	do	130.2	69	.....	.....	18
171052	do	do	do	do	133.3	67.5	.....	19	18.8
Average of 7 males					.....	68.7	46.8	17.9	17.9
170983	Female	Pulo Siantan, Anamba Islands.	Aug. 24, 1899	Dr. W. L. Abbott	136.8	65	43.5	17.5	17
171099	do	Pulo Jimaja, Anamba Islands.	Sept. 18, 1899	do	114.3	66	43	16.5	16.3
171100	do	do	Sept. 21, 1899	do	.....	63	41	16.5	17
Average of 3 females					.....	64.7	42.5	16.8	16.8

[1] Measured in the flesh by the collector. [2] Type.

CINNYRIS BRASILIANA EUMECIS, new subspecies.

Subspecific characters.—Similar to *Cinnyris brasiliana brasiliana*[1], from the Malay Peninsula, but larger, particularly the bill; female lighter above, and paler, more greenish (less golden) yellow below.

Description.—Type, adult male, No. 170974, U.S.N.M.; Pulo Siantan, Anamba Islands, September 6, 1899; Dr. W. L. Abbott. Pileum metallic grass green; lores black; sides of head and neck with hind neck and upper back, velvety black; lower back, rump, upper tail-coverts, and lesser wing-coverts, metallic deep verditer blue, with a pronounced violet sheen, this almost absent on upper tail-coverts; tail metallic indigo blue, with a violet tinge; wings clove brown, the greater and median coverts, together with the tertials, velvety violet black; throat metallic violet; jugulum, breast, and upper abdomen maroon; rest of abdomen and crissum brownish black, the latter with the feathers margined with paler brownish; lining of wing black.

The following six specimens are in the collection:

Adult male, No. 171096, U.S.N.M.; Pulo Jimaja, September 18, 1899.

Adult male (type), No. 170974, U.S.N.M.; Pulo Siantan, September 6, 1899.

Immature male, No. 170975, U.S.N.M.; Pulo Siantan, September 6, 1899. Length, 95.5 mm.

[1] For the change of *Cinnyris hasseltii* to *Cinnyris brasiliana*, see Oberholser, Smiths. Misc. Coll., vol. 60, No. 7, October 26, 1912, p. 18.

Adult female, No. 170979, U.S.N.M.; Pulo Siantan, September 6, 1899. "Feet black."

Adult female, No. 171056, U.S.N.M.; Pulo Manguan, August 31 or September 1, 1899. "Bill black, brownish beneath at base; feet black."

Juvenal female, No. 171097, U.S.N.M.; Pulo Jimaja, September 18, 1899.

The two adult males are identical except for the more golden shade of the metallic green crown, the more violet throat, lower back, and rump, and the lighter shade of red on the breast and upper abdomen in the type; but these differences are of course merely individual. These males are in molt about two-thirds to three-fourths completed. The immature male (No. 170975, U.S.N.M.) is still almost half in the olive green and olive yellow juvenal plumage, which closely resembles the adult female, though darker and duller above. This bird is in process of molt, and the posterior upper and lower parts and tail are wholly, the breast, upper back, and wings partly, in the adult plumage.

The two adult females (Nos. 170979 and 171056, U.S.N.M.) are in nearly completed molt. The immature female (No. 171097, U.S.N.M., taken, September 19, 1899) is very much like the adult female, but is considerably darker above, and on the breast has obscure narrow dusky bars. It apparently has not yet begun to molt into the adult plumage.

Doctor Abbott reported this sun-bird common at Telok Ayer Bini, on Pulo Siantan, September 5–6, 1899; and on Pulo Jimaja, September 17–28, 1899.

Measurements of the four adults are as follows:

Measurements of specimens of Cinnyris brasiliana eumecis.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe without claw.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*	*mm.*
171096....	Male....	Pulo Jimaja, Anamba Islands.	Sept. 18, 1899	Dr. W. L. Abbott.	.....	49	31	16	12.2	9
170974....	...do.....	Pulo Siantan, Anamba Islands.[2]	Sept. 6, 1899	...do.....	101.6	49	28.5	16	12.8	9
Average of two males.....					101.6	49	29.8	16	12.5	9
170979....	Female..	Pulo Siantan, Anamba Islands.	Sept. 6, 1899	Dr. W. L. Abbott.	.....	46.5	26.5	14.8	13	8
171056....	...do.....	Pulo Manguan, Anamba Islands.	Aug. 31 or Sept. 1, 1899.	...do	.....	46	27	.....	13	8
Average of two females.....					.....	46.3	26.8	14.8	13	8

[1] Measured in the flesh by the collector.

[2] Type.

AETHOPYGA SIPARAJA OCHROPYRRHA, new subspecies.

Subspecific characters.—Similar to *Aethopyga siparaja siparaja* from Sumatra, but larger; adult male with red of anterior lower parts lighter; posterior lower parts paler, less blackish medially, and averaging slightly less olivaceous laterally. Young male lighter, more grayish or greenish (less golden) olive green above, and paler, less olive yellowish below.

Description.—Type, adult male, No. 174850, U.S.N.M.; Pulo Rittan, Anamba Islands, May 21, 1900; Dr. W. L. Abbott. Forehead and fore part of crown metallic plum purple; lores black; sides of head and neck, occiput, cervix, scapulars, upper back, and lesser wing-coverts rather light maroon; lower back brownish slate; rump cadmium yellow; upper tail-coverts metallic royal purple; tail brownish black, the middle feathers and outer webs of most of the others margined with metallic purple; wings dark hair brown, the outer primaries narrowly edged with pale brownish, the secondaries, greater and middle coverts, narrowly margined with olive green; chin, throat, and jugulum, scarlet vermilion; a long submalar streak metallic bluish purple; posterior lower parts brownish mouse gray, the middle of breast dark brownish, the flanks slightly washed with olivaceous; lining of wing mostly dull white, exteriorly hair brown.

Fifteen specimens are in the collection, as follows:

Adult male (type), No. 174850, U.S.N.M.; Pulo Rittan, May 21, 1900.

Adult male, No. 170977, U.S.N.M.; Pulo Siantan, August 20, 1899.

Adult male, No. 171008, U.S.N.M.; Pulo Mobur, August 27, 1899.

Adult male, No. 171007, U.S.N.M.; Pulo Mobur, August 27, 1899.

Adult male, No. 171028, U.S.N.M.; Pulo Mata, August 29, 1899.

Adult male, No. 171038, U.S.N.M.; Pulo Kelong, August 30, 1899.

Adult male, No. 171054, U.S.N.M.; Pulo Manguan, August 31, 1899.

Adult male, No. 171098, U.S.N.M.; Pulo Jimaja, September 19, 1899.

Juvenal male, No. 171053, U.S.N.M.; Pulo Manguan, August 31, 1899. Length, 108 mm.

Juvenal [male], No. 171055, U.S.N.M.; Pulo Manguan, September 1, 1899. "Bill black above, becoming pale fleshy brown at base beneath; feet dark fleshy brown; soles yellowish." Length, 101.5 mm.

Juvenal male, No. 170978, U.S.N.M.; Pulo Siantan, September 6, 1899. Length, 105 mm.

Juvenal male, No. 170980, U.S.N.M.; Pulo Siantan, September 6, 1899. Length, 92 mm.

Juvenal [male], No. 170981, U.S.N.M.; Pulo Siantan, September 10, 1899. Length, 108 mm.

Juvenal male, No. 170976, U.S.N.M.; Pulo Siantan, August 20, 1899.

Adult female, No. 171061, U.S.N.M.; Pulo Telaga, September 15, 1899. Length, 105 mm.

The adult males exhibit little individual color variation except on the posterior lower parts, which are in some specimens darker, more slaty. The colors of the plumage are apparently unaffected to any appreciable degree by wear, except that the red of the upper parts becomes rather duller in late summer. All the adult males taken between August 20 and September 19, inclusive, are more or less in process of molt.

The male in juvenal plumage is at first practically like the adult female, though somewhat darker and duller or more bronzy, and usually with a touch of red on chin, throat or back. From this stage it passes directly into the adult livery by molt in the first autumn. One of Doctor Abbott's specimens (No. 170980, U.S.N.M.) is all in female plumage, except for a very slight wash of red on the chin; another (No. 171055, U.S.N.M.) is similar, though darker and duller on the anterior lower parts, and with a slight reddish wash over most of the throat; another (No. 170978, U.S.N.M.) is like the last, but with a more extensive and conspicuous red gular patch; while a fourth lacks entirely the red on chin and throat, but has a large red area on the back. In all four of the juvenal males just mentioned the red-tipped feathers are evidently of the juvenal plumage, because they have olive-green bases, not blackish or white as have the red feathers of the adult. One immature male (No. 171053, U.S.N.M.) taken, August 31, 1899, is still in partly juvenal plumage, but has already acquired part of the adult dress in the brownish gray posterior lower parts; the yellow rump; the purple upper tail-coverts; purplish rectrices, though most of these are but partly grown; a line of red feathers down the middle of the throat, and many scattered red feathers on the sides of the neck, on cervix, back, and scapulars; and a few purplish metallic feathers on the forehead and in the submalar streak. The remaining juvenal male (No. 170976, U.S.N.M., Aug. 20) is in the plumage of the female, except for a reddish wash on the throat, and a few scattered bright-colored feathers of the adult livery, into which it is just beginning to molt.

Doctor Abbott reports that he found this species abundant on Pulo Manguan; and that in early September it was the commonest sun-bird on Pulo Siantan, where it inhabits the thick forest.[1]

Measurements of all the adults in Doctor Abbott's collection are to be found in the following table:

[1] For the character of this forest see plate 2, upper figure.

Measurements of specimens of Aethopyga siparaja ochropyrrha.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe without claw.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*	*mm.*
174850	Male	Pulo Rittan, Anamba Islands.[2]	May 21, 1900	Dr. W. L. Abbott.	114.3	50.5	41.5	16	12.7	8.8
170977	do	Pulo Siantan, Anamba Islands.	Aug. 20, 1899	do	.....	48	.....	14.2	12.5	9
171007	do	Pulo Mobur, Anamba Islands.	Aug. 27, 1899	do	.....	51.5	38	15.5	14.5	8
171008	do	do	do	do	.....	52.5	.....	15.5	14	8
171028	do	Pulo Mata, Anamba Islands.	Aug. 29, 1899	do	.....	50.2	.....	.....	13.2	7.5
171038	do	Pulo Kelong, Anamba Islands.	Aug. 30, 1899	do	111.2	52	42	15.5	13	8
171054	do	Pulo Manguan, Anamba Islands.	Aug. 31, 1899	do	117.6	51	43.8	14.9	13.5	8.5
171098	do	Pulo Jimaja, Anamba Islands.	Sept. 19, 1899	do	114.3	51	42.5	.....	13.5	8
Average of 8 males					114.4	50.8	41.6	15.3	13.4	8.2
171061	Female	Pulo Telaga, Anamba Islands.	Sept. 15, 1899	Dr. W. L. Abbott.	104.9	46	34	15.3	13	7.8

[1] Measured in the flesh by the collector. [2] Type.

Family DICAEIDAE.

DICAEUM TRIGONOSTIGMUM HYPOCHLOUM, new subspecies.

Subspecific characters.—*Similar to Dicaeum trigonostigmum trigonostigmum*,[1] from the Malay Peninsula, but male with gray of throat and slaty blue of upper parts and wings paler; juvenal female duller, more grayish (less greenish) above, and less yellowish below.

Description.—Type, immature male, No. 170972, U.S.N.M.; Pulo Siantan, Anamba Islands, September 8, 1899; Dr. W. L. Abbott. Pileum, cervix, back, scapulars, sides of head, and sides of neck, rather light slaty blue (but still much mixed with the olive green and grayish olive feathers of the juvenal plumage); rump and shorter upper tail-coverts saffron yellow; longest upper tail-coverts slaty blue like the upper parts; tail-feathers fuscous, narrowly margined with dull olive green; wings fuscous, the superior coverts and quill-edgings mostly slaty blue, the inner margin of basal portion of primaries and secondaries white; chin and throat light blue gray; breast and sides cadmium orange; abdomen, flanks, and crissum, wax yellow, the middle of abdomen lighter; thighs pale yellowish gray; lining of wing yellowish white.

Four specimens are in the collection, as follows:

[1] This specific name is derived from Τρίγωνος and στίγμα; and when Latinized should undoubtedly be treated as an adjective. Thus after *dicaeum*, a neuter name, it should be *trigonostigmum*, not *trigonostigma*, as usually written.

Nearly adult male (type), No. 170972, U.S.N.M.; Pulo Siantan, September 8, 1899.

Immature male, No. 170971, U.S.N.M.; Pulo Siantan, September 5, 1899.

Juvenal female, No. 170973, U.S.N.M.; Pulo Siantan, September 9, 1899.

Juvenal female, No. 171006, U.S.N.M.; Pulo Mobur, August 26, 1899. "Bill horn brown, orange beneath at base."

Unfortunately neither of our two males is fully adult; but the plumage of the lower parts, in the type particularly, is practically complete; while there are enough new slate blue feathers of the adult plumage on the upper surface to show the difference in color between the Anamba birds and those from the Malay Peninsula. The contrast between the females, both adult and young, of these two races is even more striking. The present form is, by reason of its much paler throat and upper surface, still more different from *Dicaeum trigonostigmum antioproctum* Oberholser,[1] of Simalur Island; *Dicaeum trigonostigmum lyprum* Oberholser,[1] of Nias Island; and *Dicaeum trigonostigmum melanthe* Oberholser,[1] of Pulo Lasia, western Sumatra.

Both of the males (the type, No. 170972, U.S.N.M., September 8, and No. 170971, U.S.N.M., September 5) are molting from the juvenal into the adult plumage, the former specimen with this molt about three-quarters complete; the latter with about a third part of the adult orange and a third of the adult blue-gray feathers of the lower parts, but with only a few scattered adult feathers in the plumage of the upper surface, wings, and tail, which are still in juvenal livery. The juvenal plumage of the male is practically like that of the adult female. One of the juvenal females (No. 171006, U.S.N.M., August 26) is in complete juvenal plumage, and shows no evidence of molt. In this stage the anterior lower parts are darker, duller, more slaty than in the adult. The other female (No. 170973, U.S.N.M., September 9) is about a third molted into the adult plumage, all but most of the lower surface of the body being still in juvenal livery.

Doctor Abbott reported this species common on Pulo Siantan, August 19 to September 6, 1899; also on Pulo Jimaja, September 17–28, 1899; and he observed it on Pulo Mata, August 24 to September 1, 1899; and on Pulo Telaga, September 14–15, 1899.

Although none of our specimens are entirely adult, they seem to be nearly or quite full grown. Their measurements are as follows:

[1] Oberholser, Smiths. Misc. Coll., vol. 60, No. 7, Oct. 26, 1912, p. 21.

Measurements of specimens of Dicaeum trigonostigmum hypochloum.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length.[1]	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe without claw.
					mm.	*mm.*	*mm.*	*mm.*	*mm.*	*mm.*
170972	Male, vix ad.	Pulo Siantan, Anamba Islands.[2]	Sept. 8, 1899	Dr. W. L. Abbott.	88.9	49.5	23.5	10.1	13	8.3
170971	Male, juvenal.	do	Sept. 5, 1899	do	95.3	51	24	10.1	14	7.7
Average of two males					92.1	50.3	23.8	10.1	13.5	8.0
170973	Female, juvenal.	Pulo Siantan, Anamba Islands.	Sept. 9, 1899	Dr. W. L. Abbott.	88.9	46	23	10	13	8
171006	do	Pulo Mobur, Anamba Islands.	Aug. 26, 1899	do	.....	50	22	10.6	13	7.8
Average of two females					88.9	48	22.5	10.3	13	7.9

[1] Measured in the flesh by the collector.

[2] Type.

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[Figures in black-faced type indicate family, specific or subspecific headings.]

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